DRAFT

PERMIT TO OPERATE 8075

AND

PART 70 OPERATING PERMIT 8075

GREKA OIL AND GAS, INC.
SOUTH CAT CANYON STATIONARY SOURCE

PALMER-STENDL LEASE, CAT CANYON FIELD
6527 DOMINION ROAD
SANTA MARIA, CALIFORNIA 93454

OPERATOR

GREKA OIL AND GAS, INC. ("GREKA")

OWNERSHIP

GREKA OIL AND GAS, INC. ("GREKA")

SANTA BARBARA COUNTY
AIR POLLUTION CONTROL DISTRICT

February 2013

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ABBREVIATIONS/ACRONYMS

AP-42	USEPA's *Compilation of Emission Factors*
API	American Petroleum Institute
ASTM	American Society for Testing Materials
BACT	Best Available Control Technology
bpd	barrels per day (1 barrel = 42 gallons)
CAM	compliance assurance monitoring
CEMS	continuous emissions monitoring
District	Santa Barbara County Air Pollution Control District
dscf	dry standard cubic foot
EU	emission unit
°F	degree Fahrenheit
gal	gallon
gr	grain
HAP	hazardous air pollutant (as defined by CAAA, Section 112(b))
H_2S	hydrogen sulfide
I&M	inspection & maintenance
k	kilo (thousand)
l	liter
lb	pound
lbs/day	pounds per day
lbs/hr	pounds per hour
LACT	Lease Automatic Custody Transfer
LPG	liquid petroleum gas
MACT	Maximum Achievable Control Technology
MM	million
MW	molecular weight
NEI	net emissions increase
NG	natural gas
NSPS	New Source Performance Standards
O_2	oxygen
OCS	outer continental shelf
ppm(vd or w)	parts per million (volume dry or weight)
psia	pounds per square inch absolute
psig	pounds per square inch gauge
PRD	pressure relief device
RACT	Reasonably Available Control Technology
ROC	reactive organic compounds, same as "VOC" as used in this permit
RVP	Reid vapor pressure
SCAQMD	South Coast Air Quality Management District
scf	standard cubic foot
scfd (or scfm)	standard cubic feet per day (or per minute)
SIP	State Implementation Plan
STP	standard temperature (60°F) and pressure (29.92 inches of mercury)
THC	Total hydrocarbons
tpy, TPY	tons per year
TVP	true vapor pressure
USEPA	United States Environmental Protection Agency
VE	visible emissions
VRS	vapor recovery system

1. Introduction

1.1 Purpose

1.1.1 General: The Santa Barbara County Air Pollution Control District (District) is responsible for implementing all applicable federal, state and local air pollution requirements that affect any stationary source of air pollution in Santa Barbara County. The federal requirements include regulations listed in the Code of Federal Regulations: 40 CFR Parts 50, 51, 52, 55, 61, 63, 68, 70 and 82. The State regulations may be found in the California Health & Safety Code, Division 26, Section 39000 et seq. The applicable local regulations can be found in the District's Rules and Regulations.

Santa Barbara County is designated as an ozone non-attainment area for the state ambient air quality standards. The County is also designated a non-attainment area for the state PM_{10} ambient air quality standard.

1.1.2 Part 70 Permitting: This is a combined permitting action that covers both the Federal Part 70 permit (*Part 70 Operating Permit No. 8075*) as well as the State Operating Permit (*Permit to Operate No. 8075*). The initial Part 70 permit for the Palmer-Stendl Lease was issued November 1, 2000 in accordance with the requirements of the District's Part 70 operating permit program. This permit is the sixth renewal of the Part 70 permit, and may include additional applicable requirements. This permit also incorporates any Part 70 minor modifications since the last renewal and is being issued as a combined Part 70 and District reevaluation permit.

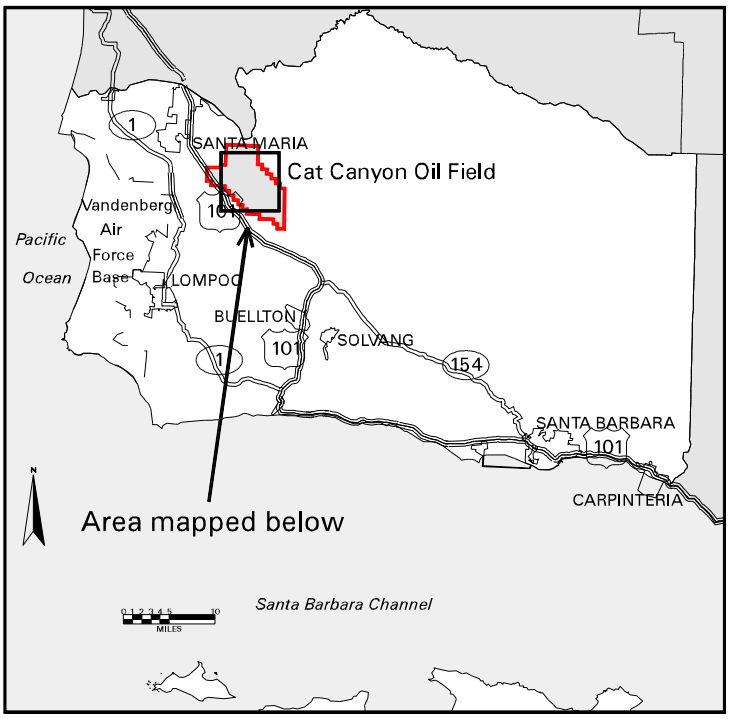
Palmer-Stendl Lease facility (FID 3307) is a part of the Greka South Cat Canyon stationary source (SSID 2658), which is a major source for NO_x and CO. Conditions listed in this permit are based on federal, state or local rules and requirements.

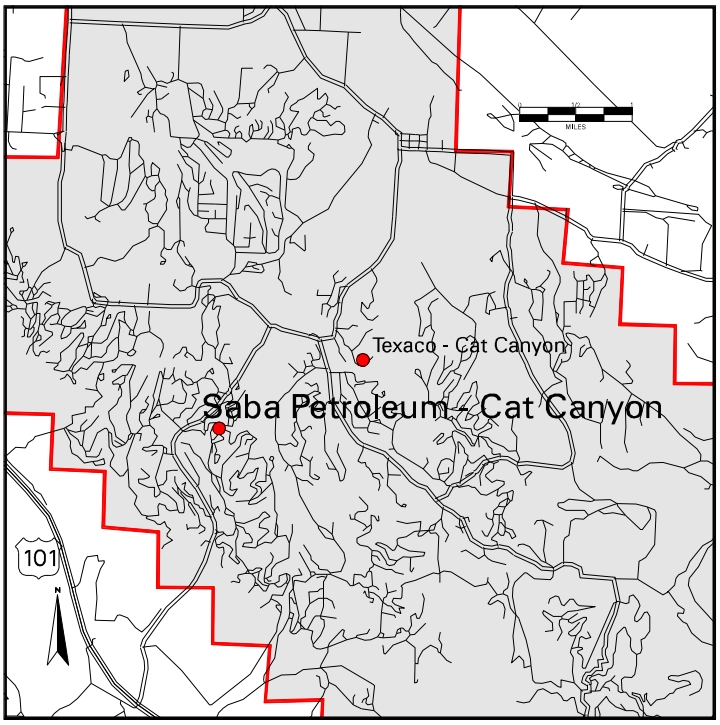
Sections 9.A, 9.B, and 9.C of this permit are enforceable by the District, the USEPA and the public since these sections are federally enforceable under Part 70. Where any reference contained in Sections 9.A, 9.B or 9.C refers to any other part of this permit, that part of the permit referred to is federally enforceable. Conditions listed in Section 9.D are "District-only" enforceable.

Pursuant to the stated aims of Title V of the CAAA of 1990 (i.e., the Part 70 operating permit program), this permit has been designed to meet two objectives. First, compliance with all conditions in this permit would ensure compliance with all federally-enforceable requirements for the facility. Second, the permit would be a comprehensive document to be used as a reference by the permittee, the regulatory agencies and the public to assess compliance.

1.1.3 Tailoring Rule: This reevaluation incorporates greenhouse gas emission calculations for the stationary source. On January 20, 2011, the District revised Rule 1301 to include greenhouse gases (GHGs) that are "subject to regulation" in the definition of "Regulated Air Pollutants". District Part 70 operating permits are being updated to incorporate the revised definition.

Figure 1.1 Location Map for Greka South Cat Canyon





1.2 Facility Overview

1.2.1 Facility Overview: Greka Oil and Gas, Inc. ("Greka") is the owner and operator of the Palmer-Stendl Lease, located at 6527 Dominion Road, Santa Maria, California 93454. The facility is located in the Cat Canyon Oil Field, approximately two miles south of the Palmer Road and Cat Canyon Road intersection and six miles south-southeast of the city of Santa Maria in Santa Barbara County. For District regulatory purposes, the facility location is in the Northern Zone of Santa Barbara County[1]. Figure 1.1 shows the relative location of the facility within the county.

Palmer-Stendl Lease was operational in September 1979 when its owner/operator Union Oil of California applied to the District for its first operating permit (ATC/PTO 4041). An operating permit was issued to Union Oil by the District in October 1979. In June 1993 the ownership of the Cat Canyon stationary source including the Palmer-Stendl Lease was transferred from Unocal to Saba Petroleum Corporation doing business as D&S Industrial Services. In January 2000, Greka assumed sole ownership.

Oil, water, and gas can be produced from eleven (11) permitted wells located on the lease. Currently, four (4) oil and gas wells are operating at the lease. As described below in Section 2.1, the entire production is piped to a central processing facility at Bell Lease.

1.2.2 Stationary Source Overview: Prior to August 2002, the Greka Cat Canyon Stationary Source was a Part 70 source consisting of the Bell, Blochman, Dominion, UCB, Palmer-Stendl and an IC engines facility. In August 2002 Greka purchased nine leases within the Cat Canyon field from Vintage Petroleum which were incorporated into the existing Greka Part 70 Cat Canyon Stationary Source at that time. In November 2008 Greka sold two of the leases within the stationary source; the California Lease and United California Lease. As a result of this sale, the stationary source configuration was reorganized based on the stationary source definition in District Rule 201. The single source was split into the following three sources: the North Cat Canyon Stationary Source consisting of the Goodwin, Harbordt, Lloyd, Mortenson, and Security/Thomas Leases; the Central Cat Canyon Stationary Source consisting of the Porter Lease and the South Cat Canyon Stationary Source consisting of the Bell, Blochman, Dominion, UCB, Palmer-Stendl, and the IC Engines Leases. Following this reorganization, only the South Cat Canyon Stationary Source (SSID 2658) remained a Part 70 source. In January 2013 Greka transferred the UCB Lease, Dominion Lease, and one IC engine from the Cat Canyon IC Engine Facility to ERG Resources.

The stationary source now consists of the following facilities:

- Bell Lease (FID 3211)
- Blochman Lease (FID 3306)
- Palmer Stendl Lease (FID 3307)
- Cat Canyon IC Engines (FID 3831)

[1] District Rule 102, Definition: "Northern Zone"

Oil and gas well production at the Greka South Cat Canyon stationary source, is produced by wells at the Bell, Blochman, and Palmer-Stendl Leases and is piped to the central processing facility at the Bell Lease. The crude oil processed at the Bell lease is sent off-site via pipelines or tanker trucks. Gas production from these wells is processed at the Bell Lease and used by the boilers and heater treaters at the Bell Lease, by the field combustion equipment throughout the Greka Cat Canyon leases, or piped to locations offsite.

The Palmer-Stendl Lease consists of the following systems:

- Oil and Gas Production wells and surface system
- Oil and Gas Gathering System

1.2.2 Facility New Source Review Overview: The following is the permit history for this facility.

PERMIT	FINAL ISSUED	PERMIT DESCRIPTION
TRN O/O 9076	08/01/1993	Saba Petroleum Corporation, doing business as D&S Industrial Services, applied to the District and obtained a change of ownership status for this lease and several other former Unocal properties
ATC/PTO 9665	12/30/1996	Greka (Saba) submitted an application to drill an oil and gas well
TRN O/O 8075-02	02/29/2000	Greka obtained ownership of Palmer-Stendl Lease from Saba Petroleum

1.3 Emission Sources

Air pollution emissions from Palmer-Stendl Lease are the result of oil and gas wells, pits and well cellars, and oil & gas piping components, such as valves and flanges. Section 4 of the permit provides the District's engineering analysis of these emission sources. Section 5 of the permit describes the allowable emissions from each permitted emissions unit, as well as, the entire Palmer-Stendl Lease. It also lists the potential emissions from non-permitted emission units. The emission sources include:

- Oil and gas wells (11)
- Well cellars (11)
- Fugitive emission components

A list of all permitted equipment is provided in Attachment 10.5.

1.4 Emission Control Overview

Air quality emission controls are utilized on Palmer-Stendl Lease for a number of emission units to reduce air pollution emissions. Additionally, the use of utility grid power allows Palmer-Stendl Lease to operate a number of electrically driven pumps and compressors on site. The emission controls employed at the facility include:

- A Fugitive Hydrocarbon Inspection & Maintenance (I&M) program for detecting and repairing leaks of hydrocarbons from piping components, consistent with the requirements of Rule 331, to reduce ROC emissions by approximately 80 percent.

- A monitoring and maintenance program for well cellars, consistent with the requirements of Rule 344, to reduce ROC emissions by approximately by 70 percent.

1.5 Offsets/Emission Reduction Credit Overview

Operation of equipment listed in this permit does not require emission offsets nor does it provide emission reduction credits (ERC). This stationary source does not exceed District Rule 802 offset thresholds for any pollutant.

1.6 Part 70 Operating Permit Overview

1.6.1 Federally-enforceable Requirements: All federally enforceable requirements are listed in 40 CFR Part 70.2 (*Definitions*) under "applicable requirements". These include all SIP-approved District Rules, all conditions in the District-issued Authority to Construct permits, and all conditions applicable to major sources under federally promulgated rules and regulations. All these requirements are enforceable by the public under CAAA. *(See Tables 3.4-1 and 3.4-2 for a list of federally enforceable requirements)*

1.6.2 Insignificant Emissions Units: Insignificant emission units are defined under District Rule 1301 as any regulated air pollutant emitted from the unit, excluding HAPs, that are less than 2 tons per year based on the unit's potential to emit and any HAP regulated under section 112(g) of the Clean Air Act that does not exceed 0.5 ton per year based on the unit's potential to emit. Insignificant activities must be listed in the Part 70 application with supporting calculations. Applicable requirements may apply to insignificant units. The only insignificant emissions associated with this facility are solvent and surface coating operations used during maintenance operations.

1.6.3 Federal Potential to Emit: The federal potential to emit (PTE) of a stationary source does not include fugitive emissions of any pollutant, unless the source is: (1) subject to a federal NSPS/NESHAP requirement which was in effect as of August 7, 1980, or (2) included in the 29-category source list specified in 40 CFR 51.166 or 52.21. The federal PTE does include all emissions from any insignificant emissions units. (*See Section 5.4 for the federal PTE for this source)*

1.6.4 Permit Shield: The operator of a major source may be granted a shield: (a) specifically stipulating any federally-enforceable conditions that are no longer applicable to the source and (b) stating the reasons for such non-applicability. The permit shield must be based on a request from the source and its detailed review by the District. Permit shields cannot be indiscriminately granted with respect to all federal requirements. Greka has not made a request for a permit shield.

1.6.5 Alternate Operating Scenarios: A major source may be permitted to operate under different operating scenarios, if appropriate descriptions of such scenarios are included in its Part 70 permit application and if such operations are allowed under federally-enforceable rules. Greka made no request for permitted alternative operating scenarios.

1.6.6 Compliance Certification: Part 70 permit holders must certify compliance with all applicable federally-enforceable requirements including permit conditions. Such certification must accompany each Part 70 permit application; and, be re-submitted annually on or before March 1st or on a more frequent schedule specified in the permit. Each certification is signed by a "responsible official" of the owner/operator company whose name and address is listed prominently in the Part 70 permit. (*see Section 1.6.9 below)*

1.6.7 Permit Reopening: Part 70 permits are re-opened and revised if the source becomes subject to a new rule or new permit conditions are necessary to ensure compliance with existing rules. The permits are also re-opened if they contain a material mistake or the emission limitations or other conditions are based on inaccurate permit application data.

1.6.8 Hazardous Air Pollutants (HAPs): Part 70 permits also regulate emission of HAPs from major sources by requiring maximum achievable control technology (MACT), where applicable. The federal PTE for HAP emissions from a source is computed to determine MACT or any other rule applicability.

1.6.9 Responsible Official: The designated responsible official and her mailing address is:

Ms. Susan Whalen, Vice-president
Greka Oil and Gas, Inc.
6527 Dominion Road
Santa Maria, California 93454

2. Process Description

2.1 Process Summary

2.1.1 Process Summary: Palmer-Stendl Lease is an oil and gas production facility. Oil, water and gas from production wells are piped to an offsite (Bell Lease) central processing facility for processing.

2.1.2 Production: Palmer-Stendl Lease operates eleven (11) wells; one of these was drilled in 1994. See Attachment 10.6 for a listing of these wells. Oil and water emulsion and gas produced by the wells are piped to the central tank battery at the Bell Lease. The production wells are not free flowing; artificial lift pumps are installed in all wells to assist in the crude oil emulsion production. Each well is connected to a casing head gas header system. This system directs produced gas to the compressor plant at Bell Lease.

2.2 Drilling Activities

2.2.1 Drilling Program: A well drilling operation was conducted on Palmer-Stendl Lease in 1994. There are currently no drilling operations at this facility.

2.2.2 Well Work-over Program: Well work-over programs have been conducted in the past on Palmer-Stendl Lease and may likely occur in the future. There are currently no well workover operations at this facility.

2.3 Maintenance/Degreasing Activities

2.3.1 Paints and Coatings: Maintenance painting at the lease is conducted on an intermittent basis. Normally only touchup and equipment labeling or tagging is done with cans of spray paint.

2.3.2 Solvent Usage: Solvents not used for surface coating thinning may be used at the lease for daily operations. Usage may include cold solvent degreasing and wipe cleaning with rags.

2.4 Planned Process Turnarounds

Major pieces of equipment such as IC engines serving the oil well pumps or the injector pumps undergo maintenance as specified by the manufacturer. Maintenance of fugitive emissions critical components is carried out according to the requirements of Rule 331 *{Fugitive Emissions Inspection and Maintenance}*.

2.5 Other Processes

Greka has stated that no other processes exist that would be subject to permit.

2.6 Detailed Process Equipment Listing

Refer to Attachment 10.5 for the Equipment List.

3. Regulatory Review

This Section identifies the federal, state and local rules and regulations applicable to Palmer-Stendl Lease.

3.1 Rule Exemptions Claimed

District Rule 202 (*Exemptions to Rule 201*): Greka has not requested any permit exemptions under this rule.

- *Note for De Minimis Exemption.* An exemption from permit, however, does not necessarily grant relief from any applicable prohibitory rule unless specifically exempted by that prohibitory rule.

- *Note for Solvents.* Per Rule 202.U, specified solvent use for operations listed in this section of the rule are exemption from permit. An exemption from permit, however, does not necessarily grant relief from any applicable prohibitory rule unless specifically exempted by that prohibitory rule.

3.2 Compliance with Applicable Federal Rules and Regulations

3.2.1 40 CFR Parts 51/52 {*New Source Review (Nonattainment Area Review and Prevention of Significant Deterioration*)}: Palmer-Stendl Lease was constructed and permitted prior to the applicability of these regulations. However, all permit modifications as of July, 1979 are subject to District NSR requirements. Compliance with District Regulation VIII (*New Source Review*) ensures that future modifications to the facility will comply with these regulations.

3.2.2 40 CFR Part 60 {*New Source Performance Standards}*: None of the equipment in this permit are subject NSPS requirements.

3.2.3 40 CFR Part 61 *{NESHAP}*: None of the equipment in this permit are subject NESHAP requirements.

3.2.4 40 CFR Part 63 *{MACT}:* This facility is not currently subject to the provisions of this Subpart. On June 17, 1999, EPA promulgated Subpart HH, a National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Oil and Natural Gas Production and Natural Gas Transmission and Storage. Pursuant to this promulgation, Greka submitted information in June 2000 and supporting information in July 2000 indicating that the Bell, Blochman, and Palmer-Stendl Leases were exempt from the requirements of this MACT based on its black oil production. The MACT exemption holds for the South Cat Canyon stationary source, since black oil is produced at each of the leases comprising the source. The Greka South Cat Canyon stationary source is subject to general recordkeeping requirements as defined in condition 9.B.7.

3.2.6 40 CFR Part 63 *{MACT Standards}*: On August 27, 2003, EPA promulgated Subpart EEEE, a National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Organic Liquids Distribution (Non-Gasoline). The District has determined that none of the permitted facilities within the South Cat Canyon stationary source are subject to this MACT.

3.2.7 40 CFR Part 64 *{Compliance Assurance Monitoring}*: This rule became effective on April 22, 1998 and affects emission units at the source subject to a federally enforceable emission limit or standard that use a control device to comply with the emission standard, and either pre-control or post-control emissions exceed the Part 70 source emission thresholds (currently 100 TPY for any pollutant). Compliance with this rule was evaluated and it was determined that no emission units at this facility are currently subject to CAM.

3.2.8 40 CFR Part 70 *{Operating Permits}*: This Subpart is applicable to Palmer-Stendl Lease. Table **3.4-1** lists the federally-enforceable District promulgated rules that are "generic" and apply to Palmer-Stendl Lease. Table 3.4-2 lists the federally-enforceable District promulgated rules that are "unit-specific". These tables are based on data available from the District's administrative files and from Greka Part 70 Operating Permit renewal application submitted July 2009. Table 3.4-4 includes the adoption dates of these rules.

In its Part 70 renewal permit application (Form I), Greka certified compliance with all existing District rules and permit conditions. This certification is also required of Greka semi-annually. Issuance of this permit and compliance with all its terms and conditions will ensure that Greka complies with the provisions of all applicable Subparts.

3.3 Compliance with Applicable State Rules and Regulations

3.3.1 Division 26. Air Resources *{California Health & Safety Code}*: The administrative provisions of the Health & Safety Code apply to this facility and will be enforced by the District. These provisions are District-enforceable only.

3.3.2 California Administrative Code Title 17: These sections specify the standards by which abrasive blasting activities are governed throughout the State. All abrasive blasting activities at Palmer-Stendl Lease are required to conform to these standards. Compliance will be assessed through onsite inspections. These standards are District-enforceable only. However, CAC Title 17 does not preempt enforcement of any SIP-approved rule that may be applicable to abrasive blasting activities.

3.4 Compliance with Applicable Local Rules and Regulations

3.4.1 Applicability Tables: In addition to Table **3.4-1** and Table 3.4-2, Table 3.4-3 lists the non-federally enforceable District promulgated rules that apply to Palmer-Stendl Lease. Table 3.4-4 lists the adoption date of all rules applicable to this permit at the date of this permit's issuance.

3.4.2 Rules Requiring Further Discussion: This section provides a more detailed discussion regarding the applicability and compliance of certain rules.

The following is a rule-by-rule evaluation of compliance for Palmer-Stendl Lease:

Rule 301 - Circumvention: This rule prohibits the concealment of any activity that would otherwise constitute a violation of Division 26 (Air Resources) of the California H&SC and the District rules and regulations. To the best of the District's knowledge, Greka is operating in compliance with this rule.

Rule 303 - Nuisance: This rule prohibits Greka from causing a public nuisance due to the discharge of air contaminants. Based on the lease's location, the potential for public nuisance is small.

Rule 304 - Particulate Matter, Northern Zone: Palmer-Stendl Lease is considered a Northern Zone source. This rule prohibits the discharge into the atmosphere from any source particulate matter in excess of 0.3 gr/scf. Emission units subject to this rule include the boiler and the heater treaters on the lease. Compliance will be assured by requiring all combustion equipment to be maintained according to manufacturer maintenance schedules.

Rule 310 - Odorous Organic Compounds: This rule prohibits the discharge of H_2S and organic sulfides that result in a ground level impact beyond the property boundary in excess of either 0.06 ppmv averaged over 3 minutes and 0.03 ppmv averaged over 1 hour. No measured data exists to confirm compliance with this rule, however, all produced gas from Palmer-Stendl Lease is sweet. As a result, it is expected that compliance with this rule will be achieved.

Rule 317 - Organic Solvents: This rule sets specific prohibitions against the discharge of emissions of both photochemically and non-photochemically reactive organic solvents (40 lb/day and 3,000 lb/day respectively). Solvents may be used on the lease during normal operations for degreasing by wipe cleaning and for use in paints and coatings in maintenance operations. There is the potential to exceed the limits under Section B.2 during significant surface coating activities. Greka is required to maintain records to ensure compliance with this rule.

Rule 323 - Architectural Coatings: This rule sets standards for the application of surface coatings. The primary coating standard that will apply to the lease is for Industrial Maintenance Coatings that have a limit of 250 gram ROC per liter of coating, as applied. Greka is required to comply with the administrative requirements under Section F of the Rule for each container on the lease.

Rule 324 - Disposal and Evaporation of Solvents: This rule prohibits any source from disposing more than one and a half gallons of any photo-chemically reactive solvent per day by means that will allow the evaporation of the solvent into the atmosphere. Greka will be required to maintain records to ensure compliance with this rule.

Rule 325 - Crude Oil Production and Separation: This rule, revised July 19, 2001, applies to equipment used in the production, gathering, storage, processing and separation of crude oil and gas prior to custody transfer. The primary requirements of this rule are under Sections D

and E. Section D requires the use of vapor recovery systems on all tanks and vessels, including waste water tanks, oil/water separators and sumps. Section E requires that all produced gas be controlled at all times, except for wells undergoing routine maintenance. Greka has installed a vapor recovery system (VRS) on all equipment subject to this rule. All vessels and tanks and relief valves are connected to the VRS via the GCS. Compliance with Section E is met by TVP analysis and by directing all scrubbed produced gas to the GCS and from there to the off-site pipeline. Compliance with this rule will also be verified by District inspections.

Rule 331 - Fugitive Emissions Inspection and Maintenance: This rule applies to components in liquid and gaseous hydrocarbon service at oil and gas production fields. Ongoing compliance with the provisions of this rule will be assessed via the District-approved *Fugitive I&M Plan* (March 2005), facility inspection by District personnel using an organic vapor analyzer and through analysis of operator records.

Rule 344 - Petroleum Sumps, Pits and Well Cellars: This rule applies to petroleum sumps, pits and well cellars provided such sources have output exceeding 150 barrels per day. Palmer-Stendl Lease facility well cellars are subject to this rule. The compliance requirements of this rule are met since all the cellars are inspected weekly to check for spillage or leaks.

Rule 353- Adhesives and Sealants: This rule applies to the use of adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers or any other primers. Compliance with this rule is met through appropriate record keeping of adhesive and sealant materials used in addition to site inspections. Also, exclusive use of adhesive and sealant contained in containers of 16 fluid ounces or less demonstrate compliance with this rule.

Rule 505 - Breakdown Conditions: This rule describes the procedures that Greka must follow when a breakdown condition occurs to any emissions unit associated with Palmer-Stendl Lease.

A breakdown condition is defined as an unforeseeable failure or malfunction of (1) any air pollution control equipment or related operating equipment which causes a violation of an emission limitation or restriction prescribed in the District Rules and Regulations, or by State law, or (2) any in-stack continuous monitoring equipment, provided such failure or malfunction:

a. Is not the result of neglect or disregard of any air pollution control law or rule or regulation;
b. Is not the result of an intentional or negligent act or omission on the part of the owner or operator;
c. Is not the result of improper maintenance;
d. Does not constitute a nuisance as defined in Section 41700 of the Health and Safety Code;
e. Is not a recurrent breakdown of the same equipment.

Rule 603 - Emergency Episode Plans: Section "A" of this rule requires the submittal of *Stationary Source Curtailment Plan* for all stationary sources that can be expected to emit more than 100 tons per year of hydrocarbons, nitrogen oxides, carbon monoxide or particulate matter. A revised plan was submitted and approved by the District in April 2004.

Rule 810 – Federal Prevention of Significant Deterioration: This rule was adopted January 20, 2011 to incorporate the federal Prevention of Significant Deterioration rule requirements into the District's rules and regulations. Future projects at the facility will be evaluated to determine whether they constitute a new major stationary source or a major modification.

Table 3.4-1 Generic Federally-Enforceable District Rules

Generic Requirements	Affected Emission Units	Basis for Applicability
RULE 101: Compliance by Existing Installations	All emission units	Emission of pollutants
RULE 102: Definitions	All emission units	Emission of pollutants
RULE 103: Severability	All emission units	Emission of pollutants
RULE 201: Permits Required	All emission units	Emission of pollutants
RULE 202: Exemptions to Rule 201	Applicable emission units, as listed in form 1302-H of the Part 70 application	Insignificant activities/emissions, per size/rating/function
RULE 203: Transfer	All emission units	Change of ownership
RULE 204: Applications	All emission units	New equipment addition or modification to existing equipment.
RULE 205: Standards for Granting Permits	All emission units	Emission of pollutants
RULE 206: Conditional Approval of Authority to Construct or Permit to Operate	All emission units	Applicability of relevant Rules
RULE 207: Denial of Applications	All emission units	Applicability of relevant Rules
RULE 212: Emission Statements	All emission units	Administrative
RULE 301: Circumvention	All emission units	Any pollutant emission
RULE 303: Nuisance	All emission units	Emissions that can injure, damage or offend.
RULE 304: PM Concentration – North Zone	Each PM source	Emission of PM in effluent gas
RULE 317: Organic Solvents	Emission units using solvents	Solvents used in operations.
RULE 323: Architectural Coatings	Paints used in maintenance and surface coating activities	Application of architectural coatings.
RULE 324: Disposal and Evaporation of Solvents	Emission units using solvents	Solvent used in process operations.
RULE 505.A, B1, D: Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded or rule requirements are not complied with.
RULE 603: Emergency Episode Plans	Stationary sources with PTE greater than 100 tpy	Greka– Cat Canyon is a major source.
RULE 810: Federal Prevention of Significant Deterioration	New or modified emission units	Greka – Cat Canyon is a major source.
REGULATION VIII: New Source Review	All emission units	Addition of new equipment or modification to existing equipment. Applications to generate ERC Certificates.

Generic Requirements	Affected Emission Units	Basis for Applicability
REGULATION XIII (RULES 1301-1305): Part 70 Operating Permits	All emission units	Greka– Cat Canyon is a major source.

Table 3.4-2 Unit-Specific Federally-Enforceable District Rules

Unit-Specific Requirements	Affected Emission Units	Basis for Applicability
RULE 325: Crude Oil Production and Separation	Produced Gas Emissions from components	All pre-custody production and processing emission units
RULE 331: Fugitive Emissions Inspection & Maintenance	All components handling oil and gas	Components emit fugitive ROCs.
RULE 344: Petroleum sumps, cellars and pits	Well cellar units	Cellars at an oil production lease.

Table 3.4-3 Non-Federally-Enforceable District Rules

Requirement	Affected Emission Units	Basis for Applicability
RULE 210: Fees	All emission units	Administrative
RULE 310: Odorous Org. Sulfides	All emission units	Emission of organic sulfides
RULE 353: Adhesives and Sealants	Emission units using adhesives and sealants	Adhesives and sealants used in process operations.
RULES 501-504: Variance Rules	All emission units	Administrative
RULE 505.B2, B3, C, E, F, G: Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded or non-compliance with rules.
RULES 506-519: Variance Rules	All emission units	Administrative

Table 3.4-4 Adoption Dates of District Rules Applicable at Issuance of Permit

Rule No.	Rule Name	Adoption/Revision Date
Rule 101	Compliance by Existing Installations: Conflicts	June 1981
Rule 102	Definitions	June 21, 2012
Rule 103	Severability	October 23, 1978
Rule 201	Permits Required	June 18, 2008
Rule 202	Exemptions to Rule 201	June 21, 2012
Rule 203	Transfer	April 17, 1997
Rule 204	Applications	April 17, 1997
Rule 205	Standards for Granting Permits	April 17, 1997
Rule 206	Conditional Approval of Authority to Construct or Permit to Operate	October 15, 1991
Rule 208	Action on Applications - Time Limits	April 17, 1997
Rule 212	Emission Statements	October 20, 1992
Rule 301	Circumvention	October 23, 1978
Rule 303	Nuisance	October 23, 1978
Rule 304	Particulate Matter Concentration - Northern Zone	October 23, 1978
Rule 310	Odorous Organic Sulfides	October 23, 1978
Rule 317	Organic Solvents	October 23, 1978
Rule 323	Architectural Coatings	July 18, 1996
Rule 324	Disposal and Evaporation of Solvents	October 23, 1978
Rule 325	Crude Oil Production and Separation	July 19, 2001
Rule 331	Fugitive Emissions Inspection and Maintenance	December 10, 1991
Rule 344	Petroleum Sumps, Pits and Well Cellars	November 10, 1994
Rule 353	Adhesives and Sealants	June 21, 2012
Rule 360	Emissions of Oxides of NO_x from Large Water Heaters, Boilers	October 17, 2002
Rule 361	Small Boilers, Steam Generators and Process Heaters	January 17, 2008

Rule No.	Rule Name	Adoption/Revision Date
Rule 505	Breakdown Conditions (Section A, B1 and D)	October 23, 1978
Rule 603	Emergency Episode Plans	June 15, 1981
Rule 801	New Source Review	April 17, 1997
Rule 802	Nonattainment Review	April 17, 1997
Rule 803	Prevention of Significant Deterioration	April 17, 1997
Rule 804	Emission Offsets	April 17, 1997
Rule 805	Air Quality Impact and Modeling	April 17, 1997
Rule 806	Emission Reduction Credits	April 17, 1997
Rule 901	New Source Performance Standards (NSPS)	September 20, 2010
Rule 1001	National Emission Standards for Hazardous Air Pollutants (NESHAPS)	October 23, 1993
Rule 1301	General Information	January 20, 2011
Rule 1302	Permit Application	November 9, 1993
Rule 1303	Permits	January 18, 2001
Rule 1304	Issuance, Renewal, Modification and Reopening	January 18, 2001
Rule 1305	Enforcement	November 9, 1993

3.5 Compliance History

This section contains a summary of the compliance history for this facility and was obtained from documentation contained in the District's Administrative file.

3.5.1 Facility Inspections: Since the prior permit renewal, facility inspections were conducted on May 1, 2009, December 15, 2009, and August 21, 2012. The most recent inspection resulted in one Notice of Violation.

3.5.2 Violations: NOV 10198 was issued on August 22, 2012 for exceeding the allowable number of major gas leaks from the valve component category specified in Rule 331, Table 1 during a District inspection.

3.5.3 Variances: No variances are reported by Greka for the Palmer-Stendl Lease since the last permit renewal.

3.5.4 Hearing Board Actions: There are no significant historical Hearing Board actions.

4. Engineering Analysis

4.1 General

The engineering analyses performed for this permit were limited to the review of:

- Facility process flow diagrams
- Emission factors and calculation methods for each emissions unit
- Rule applicability for each emissions unit and process
- Emission control equipment (including RACT, BACT, NSPS, NESHAP, MACT)
- Emission source testing, sampling, CEMS, CAM
- Process monitors needed to ensure compliance

Unless noted otherwise, default ROC/THC reactivity profiles from the District's document titled "*VOC/ROC Emission Factors and Reactivities for Common Source Types*" dated 7/13/98 (ver. 1.1) was used to determine non-methane, non-ethane fraction of THC.

4.2 Fugitive Hydrocarbon Sources

4.2.1 General: Fugitive emissions from valves, fittings, flanges, seals, pumps, compressors and wellheads (casings) consist of reactive organic compounds (ROC) and a variety of hazardous air pollutants (HAPs) such as benzene and hexane.

4.2.2 Well Head Components: For oil wells at existing onshore sources without a detailed component count inventory, the District uses statistical models developed by the CARB/KVB to quantify emissions of fugitive ROC. District Policy and Procedure 6100.060.1996 (*Calculation of Fugitive Hydrocarbon Emissions at Oil and Gas Facilities by the CARB/KVB Method*, July 1996) is used as the basis for implementing the CARB/KVB methodology. The CARB/KVB Method uses statistical models based on the facility's gas/oil ratio and the number of active wells to determine the emission factor. Emission factors from the CARB/KVB Method were also used determining emissions from wellhead casings (i.e., piping and equipment associated with the underground casing) and from pumps and compressors.

A control efficiency of 80% was applied for all components due to the implementation of a Rule 331 inspection and maintenance program. The calculation methodology is:

$$ER = [(EF \times \#wells \div 24) \times (1 - CE) \times (HPP)]$$

Where:

ER	= Emission rate (lb/period)
EF	= ROC emission factor (lb/well-day)
# Wells	= Number of active oil and gas wells (well)
CE	= Control efficiency

HPP = Operating hours per time period (hrs/period)

Detailed emission calculations for fugitive emissions are shown in Attachment 10.1 and 10.2.

4.3 Well Cellars

4.3.1 Well Cellars: Well cellars are used for collecting oil spills from the facility at various locations such as the well head stuffing boxes and test sites. Fugitive emissions from well cellars are credited a 70 percent control efficiency for maintaining the cellars per the requirements of Rule 344. These emissions are estimated based District P&P 6100.060 (*Calculation of Fugitive Hydrocarbon Emissions at Oil and Gas Facilities by the CARB/KVB Method* - Modified for the Revised ROC Definition). These emissions units are classified as being in primary, secondary, tertiary or post-tertiary service. The calculation methodology is:

$$ER = [(EF \times SAREA \div 24) \times (1 - CE) \times (HPP)]$$

Where:

ER = emission rate (lb/period)
EF = ROC emission factor (lb/ft^2-day)
SAREA= unit surface area (ft^2)
CE = control efficiency
HPP = operating hours per time period (hrs/period)

See Attachment 10.1 and 10.2 for detailed calculations.

4.4 Gas Gathering System

Gas from the wellhead casings are gathered by a gas gathering system. Collected gases are piped to Bell Lease gas compressors for further processing. A control efficiency of 95 percent is assigned to the gas gathering system, since it is a part of the Bell Lease vapor recovery system.

4.5 Other Emission Sources

The following is a brief discussion of other emission sources at the Palmer-Stendl Lease:

4.5.1 General Solvent Cleaning/Degreasing: Solvent usage (not used as thinners for surface coating) occurring on Palmer-Stendl Lease as part of normal daily operations includes laboratory use and wipe cleaning maintenance. Mass balance emission calculations are used assuming all the solvent used evaporates to the atmosphere.

4.5.2 Surface Coating: Surface coating operations involving the use of paints, coatings and thinners typically include normal touch up activities. Also, entire facility painting programs are performed once every few years. Emissions are determined based on mass balance calculations assuming all solvents evaporate into the atmosphere. Emissions of PM/PM_{10} from paint over spray are not calculated due to the lack of established calculation techniques.

4.5.3 Abrasive Blasting: Abrasive blasting with CARB certified sands may be performed as a preparation step prior to surface coating. Particulate matter is emitted during this process. A general emission factor of 0.01 pound PM per pound of abrasive is used (SCAQMD - Permit Processing Manual, 1989) to estimate emissions of PM and PM_{10} when needed for compliance evaluations. A PM/PM_{10} ratio of 1.0 is assumed.

4.6 NSPS/NESHAP/MACT

4.6.1 BACT: None of the emission units at Palmer-Stendl Lease are subject to best available control technology (BACT) or new source performance standards (NSPS).

4.6.2 MACT - Subpart HH: On June 17, 1999, EPA promulgated Subpart HH, a National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Oil and Natural Gas Production and Natural Gas Transmission and Storage. Greka submitted information in June 2000 and supporting information in July 2000 indicating the Cat Canyon source was exempt from the requirements of this MACT based on 'black oil' production. The Greka South Cat Canyon source, which includes the Palmer Stendl lease, is still exempt from the requirements of this MACT.

4.6.3 MACT - Subpart EEEE: On August 27, 2003, EPA promulgated Subpart EEEE, a National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Organic Liquids Distribution (Non-Gasoline). A District analysis determined that the requirements of this subpart are not applicable to oil and gas production facilities and thus do not apply to this facility.

4.7 CEMS/Process Monitoring/CAM

4.7.1 CEMS: There are no CEMS at this facility.

4.7.2 Process Monitoring: In many instances, ongoing compliance beyond a single (snap shot) source test is assessed by the use of process monitoring systems. Examples of these monitors include: engine hour meters, fuel usage meters, water injection mass flow meters, flare gas flow meters and hydrogen sulfide analyzers. Once these process monitors are in place, it is important that they be well maintained and calibrated to ensure that the required accuracy and precision of the devices are within specifications. No process monitoring is required at Palmer-Stendl Lease.

4.7.3 CAM: The Greka South Cat Canyon stationary source is a major source that is subject to the USEPA's Compliance Assurance Monitoring (CAM) rule (40 CFR 64). Any emissions unit with uncontrolled emissions potential exceeding major source emission thresholds for any pollutant is subject to CAM provisions. Compliance with this rule was evaluated and it was determined that no emission units at this facility are currently subject to CAM.

4.8 Source Testing/Sampling

None of the emission units at Palmer-Stendl Lease listed in this permit are subject to source testing requirements.

4.9 Part 70 Engineering Review: Hazardous Air Pollutant Emissions

Hazardous air pollutant (HAP) emissions for the Palmer Stendl Lease are based on various HAP emission factors and the permitted operational limits and maximum facility design throughputs of this permit. HAP emission factors are shown in Table 4.9-1. Facility potential annual HAP emissions, based on the worst-case scenario listed in Section 5.3. Stationary Source potential annual HAP emissions are summarized in Table 5.3-3. These emissions are estimates only. They are not limitations.

4.9.1 Emission Factors for HAP Potential Emissions:

Fugitive Emissions: The HAP emission factors for fugitive emissions (including valves and fittings, well heads, compressors, pumps, pigging equipment, tanks, sumps/well cellars/pits and the loading rack) were obtained from Cat Canyon crude tank headspace testing (ENSR 1990). The emission factors were converted from lb/lb TOC to lb/lb ROC using the following District-approved ROC/TOC ratios:

Table 4.9-1. HAP Emission Factors

Source Type	ROC/TOC Ratio
Sumps and Well Cellars	0.606
Valves and fittings	0.391
Pumps	0.492
Wellheads	0.606
Compressors	0.262
Loading Racks	0.885
Fixed roof tanks (crude)	0.885
Pipeline Pig Launcher (gas)	0.308

Solvents/Coatings: The HAP emission factors for solvent usage and coating operations are based on the CARB *VOC Species Profile Number 802* for mineral spirits.

5.0 Emissions

5.1 General

Emissions calculations are divided into "permitted" and "exempt" categories. Permit exempt equipment is determined by District Rule 202. The permitted emissions for each emissions unit is based on the equipment's potential-to-emit (as defined by Rule 102). Section 5.2 details the permitted emissions for each emissions unit. Section 5.3 details the overall permitted emissions for the facility based on reasonable worst-case scenarios using the potential-to-emit for each emissions unit. Section 5.4 provides the federal potential to emit calculation using the definition of potential to emit used in Rule 1301. Section 5.5 provides the estimated emissions from permit exempt equipment and also serves as the Part 70 list of insignificant emission. Section 5.6 provides the net emissions increase calculation for the facility and the stationary source. In order to accurately track the emissions from a facility, the District uses a computer database. Attachment 10.4 contains the District's documentation for the information entered into that database.

5.2 Permitted Emission Limits - Emission Units

Each emissions unit associated with the facility was analyzed to determine the potential-to-emit for the following pollutants:

- Reactive Organic Compounds (ROC)

Permitted emissions are calculated for both short term (daily) and long term (annual) time periods. Section 4.0 (Engineering Analysis) provides a general discussion of the basic calculation methodologies and emission factors used. The reference documentation for the specific emission calculations, as well as detailed calculation spreadsheets, may be found in Section 4 and Attachment 10.1 and 10.2 respectively. Table 5.2-1 provides the basic operating characteristics. Table 0-2 provides the specific emission factors. Table 0-3 shows the permitted short-term emissions and Table 0-4 shows the permitted long-term emissions for each unit or operation. In the table, the last column indicates whether the emission limits are federally enforceable.

5.3 Part 70: Hazardous Air Pollutant Emissions for the Facility

Hazardous air pollutants (HAP) emission factors, for each type of emissions unit, are listed in Table 5.3-1. Potential HAP emissions, based on the worst-case scenario, are shown in Table 5.3-2. Stationary source wide HAP emissions are shown in Table 5.3-3.

5.4 Permitted Emission Limits - Facility Totals

The total potential-to-emit for all emission units associated with the facility was analyzed. This analysis looked at the reasonable worst-case operating scenarios for each operating period. The equipment operating in each of the scenarios are presented below. Unless otherwise specified, the operating characteristics defined in Table 5.2-1for each emission

unit are assumed. **Error! Reference source not found.** shows the total permitted emissions for the facility.

Daily Scenario:

- Fugitive components (wellheads, valves and fittings)
- Well cellars

Annual Scenario:

- Fugitive components (wellheads, valves and fittings)
- Well cellars

5.5 Part 70: Federal Potential to Emit for the Facility

For facilities subject to Part 70 Regulation, all emissions, except fugitive emissions, are counted in the federal definition of potential to emit. However, fugitives are counted in the Federal potential to emit if the facility is subject to any applicable NSPS or NESHAP requirement. Palmer-Stendl Lease is not subject to any NSPS/NESHAP. All emissions from the Palmer-Stendl Lease are fugitive in nature. Thus, the federal PTE for this facility is zero.

5.6 District Exempt Emission Sources/Part 70 Insignificant Emissions

Per Rule 202, maintenance activities such as painting and surface coating qualify for a permit exemption, but may contribute to facility emissions. Insignificant emission units are defined under District Rule 1301 as any regulated air pollutant emitted from the unit, excluding HAPs, that are less than 2 tons per year based on the unit's potential to emit and any HAP regulated under section 112(g) of the Clean Air Act that does not exceed 0.5 ton per year based on the unit's potential to emit. The following emission units are exempt from permit per Rule 202:

• Solvents/Surface coating operations used during maintenance operations.

Table 5.6-1 presents the estimated annual emissions from these exempt equipment items, including those exempt items not considered insignificant.

5.7 Net Emissions Increase (NEI) Calculation

The NEI Equation used by the District is: NEI = I + (P1-P2) - D

Where:

I = Potential to emit of the modification
P1 = All prior PTE increases requiring permits on or after 11/15/1990.
P2 = All prior PTE decreases requiring permits on or after 11/15/1990.
D = Pre-1990 baseline actual emission decreases = zero

This facility's net emissions increase since November 15, 1990 (the day the federal Clean Air Act Amendments was adopted in 1990) is attributed to ATC 9965. Table 10.4-3 in Attachment 10.4 of this permit shows the NEI for the Greka - South Cat Canyon stationary source. This stationary source does not exceed any District Rule 802 offset thresholds.

Table 0-1: Operating Equipment Description[2]

Equipment Category	Description	ID#	Device Specifications					Usage Data							References
			Fuel	HHV (Btu/scf)	ppmv S (a)	Size	Units	Capacity	Units	Emission Reduction %	hr	day	qtr	year	
Fugitive Components	Valves & Fittings	2892	--	--	--	11	well units	--	--	80%	1.00	24	2190	8760	A
	Wellheads	2893	--	--	--	11	well units	--	--	80%	1.00	24	2190	8760	
	Compressors	2892	--	--	--	11	well units	--	--	80%	1.00	24	2190	8760	
	Pumps	2892	--	--	--	11	well units	--	--	80%	1.00	24	2190	8760	
Sumps/Cellars/Pits	Well Cellars	2894	--	--	--	396	ft^2	--	--	70%	1.00	24	2190	8760	B

[2] ppmv as total reduced sulfur content expressed as hydrogen sulfide equivalent; but not hydrogen sulfide content only.

Table 0-2 Equipment Emission Factors[3]

Equipment Category	Description	Emission Factors							References
		NOx	ROC	CO	SOx	PM	PM10	Units	
Fugitive Components	Valves & Fittings	--	2.8053	--	--	--	--	lb/day-well	A
	Wellheads	--	0.0097	--	--	--	--	lb/day-well	
	Compressors	--	0.0679	--	--	--	--	lb/day-well	
	Pumps	--	0.0039	--	--	--	--	lb/day-well	
Sumps/Cellars/Pits	Well Cellars	--	0.0941	--	--	--	--	lb/ft^2-day	B

[3] SO_x as SO_2; NO_x as NO_2. This applies to all sheets.

Table 0-3 Short Term Emission Limits[4]

Equipment Category	Description	NOx	ROC	CO	SOx	PM	PM10	Federal
		lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	Enforceability
Fugitive Components	Valves & Fittings	--	6.17	--	--	--	--	AE
	Wellheads	--	0.02	--	--	--	--	AE
	Compressors	--	0.15	--	--	--	--	AE
	Pumps	--	0.01	--	--	--	--	AE
Sumps/Cellars/Pits	Well Cellars	--	11.18	--	--	--	--	AE

Notes

FE = federally enforceable

AE = APCD-only enforceble

[4] FE = Federally Enforceable, AE = District Only Enforceable

Table 0-4 Long Term Emission Limits

Equipment Category	Description	NOx	ROC	CO	SOx	PM	PM10	Federal
		TPY	TPY	TPY	TPY	TPY	TPY	Enforceability
Fugitive Components	Valves & Fittings	--	1.13	--	--	--	--	AE
	Wellheads	--	0.004	--	--	--	--	AE
	Compressors	--	0.03	--	--	--	--	AE
	Pumps	--	0.002	--	--	--	--	AE
Sumps/Cellars/Pits	Well Cellars	--	2.04	--	--	--	--	AE

Notes

FE = federally enforceable

AE = APCD-only enforceble

Table 03-1: Equipment HAP Emission Factors

Equipment Category	Description	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,3-Butadiene	1,3-Dichloropropene	Acetaldehyde	Acrolein	Arsenic	Barium	Benzene	Beryllium	Cadmium	Carbon tetrachloride	Chlorobenzene	Chloroform	Chromium	Cobalt	Dichlorobenzene	Ethylbenzene	Ethylene Dibromide	Ethylene Dichloride	Ethylidene Dichloride	Formaldehyde	Hexane	Manganese	Mercury	Methanol	Methylene chloride	Naphthalene	Nickel	PAHs (total)	Propylene Dichloride	Selenium	Styrene	Toluene	Vinyl chloride	Xylenes	Units
Fugitive Components	Valves & Fittings									9.36E-03								2.58E-07		3.30E-05	3.48E-04					5.63E-05		2.25E-05						3.55E-03		2.61E-04	lb/lb ROC
	Wellheads									6.04E-03								1.67E-07		2.13E-05	2.24E-04					3.63E-05		1.45E-05						2.29E-03		1.68E-04	lb/lb ROC
	Compressors									1.40E-02								3.85E-07		4.92E-05	5.19E-04					8.4E-05		3.36E-05						5.31E-03		3.89E-04	lb/lb ROC
	Pumps									7.44E-03								2.05E-07		2.62E-05	2.76E-04					4.47E-05		1.79E-05						2.83E-03		2.07E-04	lb/lb ROC
Sumps/Cellars/Pits	Well Cellars									6.04E-03								1.67E-07		2.13E-05	2.24E-04					3.63E-05		1.45E-05						2.29E-03		1.68E-04	lb/lb ROC
Solvent Usage	Maintenance (Wipe Cleaning)													2.60E-03					3.50E-03									3.50E-03						5.00E-03		3.82E-02	lb/lb ROC

Table 03-2: Facility HAP Emissions

Equipment Category	Description	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,3-Butadiene	1,3-Dichloropropene	Acetaldehyde	Acrolein	Arsenic	Barium	Benzene	Beryllium	Cadmium	Carbon tetrachloride	Chlorobenzene	Chloroform	Chromium	Cobalt	Dichlorobenzene	Ethylbenzene	Ethylene Dibromide	Ethylene Dichloride	Ethylidene Dichloride	Formaldehyde	Hexane	Manganese	Mercury	Methanol	Methylene chloride	Naphthalene	Nickel	PAHs (total)	Propylene Dichloride	Selenium	Styrene	Toluene	Vinyl chloride	Xylenes
Fugitive Components	Valves & Fittings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Wellheads	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sumps/Cellars/Pits	Well Cellars	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solvent Usage	Maintenance (Wipe Cleaning)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
	SUB- TOTAL HAPS (tpy) =	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.01**
	TOTAL HAPS (tpy) =	**0.04**																																			

1. These are estimates only, and are not intended to represent emission limits.

Table 03-3: Stationary Source HAP Emissions

Facility	FID	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,3-Butadiene	1,3-Dichloropropene	Acetaldehyde	Acrolein	Arsenic	Barium	Benzene	Beryllium	Cadmium	Carbon tetrachloride	Chlorobenzene	Chloroform	Chromium	Cobalt	Dichlorobenzene	Ethylbenzene	Ethylene dibromide	Ethylene dichloride	Ethylidene Dichloride	Formaldehyde	Hexane	Manganese	Mercury	Methanol	Methylene chloride	Naphthalene	Nickel	PAHs (total)	Propylene Dichloride	Selenium	Styrene	Toluene	Vinyl chloride	Xylenes	Total HAPS
Bell Lease	3211	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.04	0.00	0.01	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.39	0.87
Blockman Lease	3306	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.01	0.09
Palmer Stendl Lease	3307	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.04
Cat Canyon IC Engines	3831	0.00	0.00	0.02	0.00	0.09	0.09	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.01	1.12
Stationary Source Total HAPs (tpy) =		**0.00**	**0.00**	**0.02**	**0.00**	**0.10**	**0.09**	**0.00**	**0.00**	**0.30**	**0.00**	**0.00**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.04**	**0.00**	**0.01**	**0.00**	**0.70**	**0.09**	**0.00**	**0.00**	**0.11**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.17**	**0.00**	**0.42**	**2.13**

1. These are estimates only, and are not intended to represent emission limits.

Table 5.4-1. Total Permitted Facility Emissions

A. Daily

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Fugitive Components	--	6.35	--	--	--	--
Sumps/Cellars/Pits	--	11.18	--	--	--	--
Totals (lb/day)	**0.00**	**17.53**	**0.00**	**0.00**	**0.00**	**0.00**

B. Annual

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Fugitive Components	--	1.16	--	--	--	--
Sumps/Cellars/Pits	--	2.04	--	--	--	--
Totals (TPY)	**0.00**	**3.20**	**0.00**	**0.00**	**0.00**	**0.00**

Table 5.6-1. Estimated Permit Exempt Emissions

Equipment Category	Description	Exemption Claimed	Usage Data		Reference
Solvent Usage	Maintenance (Wipe Cleaning)	202.U	55	gal/yr	C
	Laboratory Use	202.N			

Equipment Category	Description	Emission Factor	Unit	NOx	ROC	CO	SOx	PM	PM10
Solvent Usage	Maintenance (Wipe Cleaning)	6.6	lb/gal	--	0.18	--	--	--	--
	Laboratory Use			--	10	--	--	--	--
	Totals (TPY):			**0.00**	**10.18**	**0.00**	**0.00**	**0.00**	**0.00**

Table 5.7-1. Facility Net Emissions Increase (NEI-90)

Permit	Description	Issued	Units	NOx	ROC	CO	SOx	PM	PM10
ATC 9965	Oil and Gas Well	12/30/1996	lbs/hr	--	0.02	--	--	--	--
			lbs/day	--	0.48	--	--	--	--
			TPQ	--	0.03	--	--	--	--
			TPY	--	0.10	--	--	--	--
Facility NEI Contribution		P1	lbs/hr	--	**0.02**	--	--	--	--
			lbs/day	--	**0.48**	--	--	--	--
			TPQ	--	**0.03**	--	--	--	--
			TPY	--	**0.10**	--	--	--	--

6 Air Quality Impact Analyses

6.1 *Modeling*

Air quality modeling was not required for this stationary source.

6.2 *Increments*

An air quality increment analysis was not required for this stationary source.

6.3 *Monitoring*

Air quality monitoring is not required for this stationary source.

6.4 *Health Risk Assessment*

The Greka South Cat Canyon stationary source is subject to the AB 2588 Air Toxics "Hot Spots" Program. A health risk assessment (HRA) for the Greka South Cat Canyon stationary source, as configured at the time, was prepared by the District in 2000 under the requirements of the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588). The HRA is based on 1998 toxic emissions inventory data submitted to the District by Greka.

Based on the 1998 toxic emissions inventory, a cancer risk of 12 per million at the property boundary was estimated for part of the Cat Canyon stationary source, which included the Bell, Blochman and Palmer-Stendl leases and all associated equipment. This risk was primarily due to emissions of polycyclic aromatic hydrocarbons (PAHs) and acrolein from internal combustion engines and gas-fired boilers. The hazard index (HI) for the facilities was determined to be 0.27 for chronic risk, and 22.93 for acute risk. HI is a ratio of the predicted concentration of the facilities reported emissions to a concentration considered acceptable by public health professionals. The baseline for significant cancer risk is 10 and for non-cancer risk is 1, therefore both the cancer and acute risk are considered significant. The cancer and non-cancer chronic risk projections are over the District's AB 2588 significance thresholds of 10 in a million and 1.0 respectively.

The District is currently evaluating the health risk based on the Air Toxics Emission Inventory Report (ATEIR) for reporting year 2003 for the Greka South Cat Canyon stationary source using the Hotspots Analysis and Reporting Program (HARP) software.

7 CAP Consistency, Offset Requirements and ERCs

7.1 *General*

Santa Barbara County is in attainment of the federal ozone standard but is in nonattainment of the state eight-hour ozone ambient air quality standard. In addition, the County is in nonattainment of the state PM_{10} ambient air quality standards. The County is either in attainment or unclassified with respect to all other ambient air quality standards. Therefore, emissions from all emission units at the stationary source and its constituent facilities must be consistent with the provisions of the USEPA and State approved Clean Air Plans (CAP) and must not interfere with maintenance of the federal ambient air quality standards and progress towards attainment of the state ambient air quality standards. Under District regulations, any modifications at this stationary source that result in an emissions increase of any nonattainment pollutant exceeding 25 lbs/day must apply BACT (NAR). Additional increases may trigger offsets at the source or elsewhere so that there is a net air quality benefit for Santa Barbara County. These offset threshold levels are 55 lbs/day for all non-attainment pollutants except PM_{10} for which the level is 80 lbs/day.

7.2 *Clean Air Plan*

The 2007 Clean Air Plan, adopted by the District Board on August 16, 2007, addressed both federal and state requirements, serving as the maintenance plan for the federal eight-hour ozone standard and as the state triennial update required by the Health and Safety Code to demonstrate how the District will expedite attainment of the state eight-hour ozone standard. The plan was developed for Santa Barbara County as required by both the 1998 California Clean Air Act and the 1990 Federal Clean Air Act Amendments.

On January 20, 2011 the District Board adopted the 2010 Clean Air Plan. The 2010 Plan provides a three-year update to the 2007 Clean Air Plan. As Santa Barbara County has yet to attain the state eight-hour ozone standard, the 2010 Clean Air Plan demonstrates how the District plans to attain that standard. The 2010 Clean Air Plan therefore satisfies all state triennial planning requirements.

7.3 *Offset Requirements*

The Greka South Cat Canyon stationary source does not trigger offsets.

7.4 *Emission Reduction Credits*

Emission reduction credits, granted to Greka are detailed in revised DOI 006 issued to Greka by the District, in May 2003. The ERC's are based on IC Engine emission reductions at the Bell Lease Compressor Plant [*Re: District PTO 8036, ATC 9975-01, DOI 006-02*] The original ERC certificate #0011-1103 issued to Greka per DOI 006 has since been sold in part to various sources within Santa Barbara County. ERC certificate #189-1113 includes the remaining portion (CO credits) of the original ERC owned by Greka.

8 Lead Agency Permit Consistency

To the best of the District's knowledge, no other governmental agency's permit requires air quality mitigation for emissions pursuant to this permit issued to Palmer-Stendl Lease.

9 Permit Conditions

This section lists the applicable permit conditions for Palmer-Stendl Lease. Section A lists the standard administrative conditions. Section B lists 'generic' permit conditions, including emission standards, for all equipment in this permit. Section C lists conditions affecting specific equipment. Section D lists non-federally enforceable (i.e., District only) permit conditions. Conditions listed in Sections A, B and C are enforceable by the USEPA, the District, the State of California and the public. Conditions listed in Section D are enforceable only by the District and the State of California. Where any reference contained in Sections 9.A, 9.B or 9.C refers to any other part of this permit, that part of the permit referred to is federally enforceable. In case of a discrepancy between the wording of a condition and the applicable federal or District rule(s), the wording of the rule shall control.

For the purposes of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in this permit, nothing in the permit shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test had been performed

9.A Standard Administrative Conditions

The following federally-enforceable administrative permit conditions apply to Palmer-Stendl Lease:

A.1 **Compliance with Permit Conditions.**

(a) The permittee shall comply with all permit conditions in Sections 9.A, 9.B, and 9.C.

(b) This permit does not convey property rights or exclusive privilege of any sort.

(c) Any permit noncompliance with sections 9.A, 9.B, or 9.C constitutes a violation of the Clean Air Act and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application.

(d) It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

(e) A pending permit action or notification of anticipated noncompliance does not stay any permit conditions.

(f) Within a reasonable time period, the permittee shall furnish any information requested by the Control Officer, in writing, for the purpose of determining:
(i) Compliance with the permit, or

(ii) Whether or not cause exists to modify, revoke and reissue, or terminate a permit or for an enforcement action.

(g) In the event that any condition herein is determined to be in conflict with any other condition contained herein, then, if principles of law do not provide to the contrary, the condition most protective of air quality and public health and safety shall prevail to the extent feasible. *[Re: 40 CFR Part 70.6.(a)(6), District Rules 1303.D.1]*

A.2 **Emergency Provisions.** The permittee shall comply with the requirements of the District, Rule 505 (Upset/Breakdown rule) and/or District Rule 1303.F, whichever is applicable to the emergency situation. In order to maintain an affirmative defense under Rule 1303.F, the permittee shall provide the District, in writing, a "notice of emergency" within 2 working days of the emergency. The "notice of emergency" shall contain the information/ documentation listed in Sections (1) through (5) of Rule 1303.F. *[Re: 40 CFR 70.6(g), District Rule 1303.F]*

A.3 **Compliance Plan.**

(a) The permittee shall comply with all federally enforceable requirements that become applicable during the permit term in a timely manner.

(b) For all applicable equipment, the permittee shall implement and comply with any specific compliance plan required under any federally-enforceable rules or standards. *[Re: District Rule 1302.D.2]*

A.4 **Right of Entry.** The Regional Administrator of USEPA, the Control Officer, or their authorized representatives, upon the presentation of credentials, shall be permitted to enter upon the premises where a Part 70 Source is located or where records must be kept:

(a) To inspect the stationary source, including monitoring and control equipment, work practices, operations, and emission-related activity;

(b) To inspect and duplicate, at reasonable times, records required by this Permit to Operate;

(c) To sample substances or monitor emissions from the source or assess other parameters to assure compliance with the permit or applicable requirements, at reasonable times. Monitoring of emissions can include source testing. *[Re: District Rule 1303.D.2]*

A.5 **Severability.** In the event that any condition herein is determined to be invalid, all other conditions shall remain in force. *[Re: District Rules 103 and 1303.D.1]*

A.6 **Permit Life.** The Part 70 permit shall become invalid three years from the date of issuance unless a timely and complete renewal application is submitted to the District. Any operation of the source to which this Part 70 permit is issued beyond the expiration date of this Part 70

permit and without a valid Part 70 operating permit (or a complete Part 70 permit renewal application) shall be a violation of the CAAA, § 502(a) and 503(d) and of the District rules.

The permittee shall apply for renewal of the Part 70 permit no later than 180 days before the date of the permit expiration. Upon submittal of a timely and complete renewal application, the Part 70 permit shall remain in effect until the Control Officer issues or denies the renewal application. *[Re: District Rule 1304.D.1]*

A.7 **Payment of Fees.** The permittee shall reimburse the District for all its Part 70 permit processing and compliance expenses for the stationary source on a timely basis. Failure to reimburse on a timely basis shall be a violation of this permit and of applicable requirements and can result in forfeiture of the Part 70 permit. Operation without a Part 70 permit subjects the source to potential enforcement action by the District and the USEPA pursuant to section 502(a) of the Clean Air Act. *[Re: District Rules 1303.D.1 and 1304.D.11, 40 CFR 70.6(a)(7)]*

A.8 **Prompt Reporting of Deviations.** The permittee shall submit a written report to the District documenting each and every deviation from the requirements of this permit or any applicable federal requirements within seven (7) days after discovery of the violation, but not later than six (6) months after the date of occurrence. The report shall clearly document 1) the probable cause and extent of the deviation, 2) equipment involved, 3) the quantity of excess pollutant emissions, if any, and 4) actions taken to correct the deviation. The requirements of this condition shall not apply to deviations reported to District in accordance with Rule 505, Breakdown Conditions, or Rule 1303.F Emergency Provisions. *[District Rule 1303.D.1, 40 CFR 70.6(a) (3)]*

A.9 **Reporting Requirements/Compliance Certification.** The permittee shall submit compliance certification reports to the USEPA and the Control Officer every six months. These reports shall be submitted on District forms and shall identify each applicable requirement/condition of the permit, the compliance status with each requirement/condition, the monitoring methods used to determine compliance, whether the compliance was continuous or intermittent, and include detailed information on the occurrence and correction of any deviations (excluding emergency upsets) from permit requirement. The reporting periods shall be each half of the calendar year, e.g., January through June for the first half of the year. These reports shall be submitted by September 1st and March 1st, respectively, each year. Supporting monitoring data shall be submitted in accordance with the "Semi-Annual Compliance Verification Report" condition in Section 9.C. The permittee shall include a written statement from the responsible official, which certifies the truth, accuracy, and completeness of the reports. *[Re: District Rules 1303.D.1, 1302.D.3, 1303.2.c]*

A.10 **Federally Enforceable Conditions.** Each federally enforceable condition in this permit shall be enforceable by the USEPA and members of the public. None of the conditions in the District-only enforceable section of this permit are federally enforceable or subject to the public/USEPA review. *[Re: CAAA, §502(b)(6), 40 CFR 70.6(b)]*

A.11 **Recordkeeping Requirements**. The permittee shall maintain records of required monitoring information that include the following:

(a) The date, place as defined in the permit, and time of sampling or measurements;

(b) The date(s) analyses were performed;

(c) The company or entity that performed the analyses;

(d) The analytical techniques or methods used;

(e) The results of such analyses; and

(f) The operating conditions as existing at the time of sampling or measurement;

The records (electronic or hard copy), as well as all supporting information including calibration and maintenance records, shall be maintained for a minimum of five (5) years from date of initial entry by the permittee and shall be made available to the District upon request. *[Re: District Rule 1303.D.1.f, 40 CFR 70.6(a)(3)(ii)(A)]*

A.12 **Conditions for Permit Reopening.** The permit shall be reopened and revised for cause under any of the following circumstances:

(a) Additional Requirements: If additional applicable requirements (e.g., NSPS or MACT) become applicable to the source which has an unexpired permit term of three (3) or more years, the permit shall be reopened. Such a reopening shall be completed no later than 18 months after promulgation of the applicable requirement. However, no such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended. All such re-openings shall be initiated only after a 30 day notice of intent to reopen the permit has been provided to the permittee, except that a shorter notice may be given in case of an emergency.

(b) Inaccurate Permit Provisions: If the District or the USEPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emission standards or other terms or conditions of the permit, the permit shall be reopened. Such re-openings shall be made as soon as practicable.

(c) Applicable Requirement: If the District or the USEPA determines that the permit must be revised or revoked to assure compliance with any applicable requirement including a federally enforceable requirement, the permit shall be reopened. Such re-openings shall be made as soon as practicable.

(d) Administrative Procedures: To reopen a permit shall follow the same procedures as apply to initial permit issuance. Re-openings shall affect only those parts of the permit for which cause to reopen exists. If the permit is reopened, and revised, it will be reissued with the expiration date that was listed in the permit before the re-opening. *[Re: 40 CFR 70.7(f), 40 CFR 70.6(a)]*

A.13 **Credible Evidence.** Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defenses otherwise available to the permittee, including but not limited to, any challenge to the Credible Evidence Rule (see 62 Fed. Reg. 8314, Feb. 24, 1997), in the context of any future proceeding. *[Re: 40 CFR 52.12(c)]*

9.B. Generic Conditions

The generic conditions listed below apply to all emission units, regardless of their category or emission rates. These conditions are federally enforceable. Compliance with these requirements is discussed in Section 3. In case of a discrepancy between the wording of a condition and the applicable federal or District rule(s), the wording of the rule shall control.

B.1 **Circumvention (Rule 301).** A person shall not build, erect, install, or use any article, machine, equipment or other contrivance, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, reduces or conceals an emission which would otherwise constitute a violation of Division 26 (Air Resources) of the Health and Safety Code of the State of California or of these Rules and Regulations. This Rule shall not apply to cases in which the only violation involved is of Section 41700 of the Health and Safety Code of the State of California, or of District Rule 303. *[Re: District Rule 301]*

B.2 **Nuisance (Rule 303).** No pollutant emissions from any source at Greka shall create nuisance conditions. No operations shall endanger health, safety or comfort, nor shall they damage any property or business. *[Re: District Rule 303]*

B.3 **Organic Solvents (Rule 317).** Greka shall comply with the emission standards listed in Section B of Rule 317. Compliance with this condition shall be based on Greka's compliance with Condition D.10 of this permit and facility inspections. *[Re: District Rule 317]*

B.4 **Architectural Coatings (Rule 323).** Greka shall comply with the coating ROC content and handling standards listed in Section D of Rule 323 as well as the Administrative requirements listed in Section F of Rule 323. Compliance with this condition shall be based on Greka's compliance with Condition D.10 of this permit and facility inspections. *[Re: District Rule 323]*

B.5 **Disposal and Evaporation of Solvents (Rule 324).** Greka shall not dispose through atmospheric evaporation of more than one and a half gallons of any photochemically reactive solvent per day. Compliance with this condition shall be based on Greka SMV's compliance with Condition D.10 of this permit and facility inspections. *[Re: District Rule 324]*

B.6 **Adhesives and Sealants (Rule 353).** The permittee shall not use adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, or any other primers, unless the permittee complies with the following:

(a) Such materials used are purchased or supplied by the manufacturer or suppliers in containers of 16 fluid ounces or less; or alternately

(b) When the permittee uses such materials from containers larger than 16 fluid ounces and the materials are not exempt by Rule 353, Section B.1, the total reactive organic compound emissions from the use of such material shall not exceed 200 pounds per year unless the substances used and the operational methods comply with Sections D, E, F, G, and H of Rule 353. Compliance shall be demonstrated by recordkeeping

in accordance with Section B.2 and/or Section O of Rule 353. *[Re: District Rule 353]*

B.7 **Oil and Natural Gas Production MACT.** Greka shall comply with the following General Recordkeeping (40 CFR 63.10(b)(2)) MACT requirements:

(a) Greka shall maintain records of the occurrence and duration of each startup, shutdown, or malfunction of operation;

(b) Actions taken during periods of startup, shutdown, and malfunction when different from the procedures specified in Greka SMV's startup, shutdown, and malfunction plan (SSMP);

(c) All information necessary to demonstrate conformance with Greka SMV's SSMP when all actions taken during periods of startup, shutdown, and malfunction are consistent with the procedures specified in such plan;

(d) All required measurements needed to demonstrate compliance with a relevant standard, including all records with respect to applicability determination, and black oil documentation per 40 CFR 63.760;

(e) Any information demonstrating whether a source is meeting the requirements for a waiver of recordkeeping or reporting requirements under this condition;

(f) Greka shall maintain records of SSM events indicating whether or not the SSMP was followed;

(g) Greka shall submit a semi-annual startup, shutdown, and malfunction report as specified in 40 CFR 63.10.d.5. The report shall be due by July 30th and January 30th. *[Re: 40 CFR 63, Subpart HH]*

9.C Requirements and Equipment Specific Conditions

This section includes non-generic federally-enforceable conditions, emissions and operations limits, monitoring, recordkeeping and reporting conditions are included in this section for each specific equipment group. This section may also contain other non-generic conditions.

C.1 **Fugitive Hydrocarbon Emissions Components.** The following equipment are included in this emissions unit category:

Table C.1-1 Fugitive Hydrocarbon Component List

District Device ID #	Name
	Oil Service Components
2892	Valves – Bellows Seal
2892	Valves – Accessible/Inaccessible
2892	Valves – Unsafe
2892	Valves - LEV Accessible/Inaccessible

2892	Valves - LEV Unsafe
2892	Flanges/Connections – Accessible/Inaccessible
2892	Flanges/Connections – Unsafe
2892	Compressor Seals – To Atm
2892	Compressor Seals – To VRU
2892	Relief Valves – To Atm
2892	Relief Valves – To VRU
2892	Pump Seals – Tandem
2892	Pump Seals – Single
2892	Exempt
2893	Wellheads – located at eleven (11) well units

(a) Emission Limits: Mass emissions from the gas/light liquid service and oil service components listed above shall not exceed the limits listed in Tables 5.2-3 and 5.2-4. Compliance with these limits shall be assessed through compliance with the monitoring, recordkeeping, and reporting (MRR) conditions listed in this permit.

(b) Operational Limits: Operation of the equipment listed in Table C.1-1 above and the gas gathering system shall conform to the requirements listed in District Rule 331.D and E. Compliance with these limits shall be assessed through compliance with the monitoring, recordkeeping and reporting (MRR) conditions listed in this permit. In addition Greka shall meet the following:

1. *GCS Use.* The gas collection system (GCS) including the gas plant compressors fed by the GCS shall be in operation when the equipment connected to the GCS system at the facility is in use. The GCS system also includes headers, manifolds, piping, valves, and flanges associated with the GCS system. The GCS system shall be maintained and operated to minimize the release of emissions from all systems, including pressure relief valves and gauge hatches and any components belonging to the oil and gas separators and weigh meters listed above.

2. *Rule 331 I&M Program.* The District-approved *I&M Plan* (March 2005) for the Palmer-Stendl Lease in the Greka South Cat Canyon Stationary Source shall be implemented for the life of the project. The Plan, and any subsequent District approved revisions, is incorporated by reference as an enforceable part of this permit. Within sixty (60) days of the issuance of this permit, Greka shall submit for District approval, a revised *Fugitive I&M Plan* for the South Cat Canyon Stationary source.

3. *Rule 331 Exemption Request.* If Greka wishes to maintain or obtain the Rule 331 B.2.c exemption from the MRR requirements of Rule 331, then Greka shall submit an exemption request to the District which shall include a current inventory of all 1/2″ or smaller stainless steel tube fittings and a written statement certifying under penalty of perjury that all one-half inch and smaller stainless steel tube fittings have been inspected in accordance with the requirements of Rule 331 Section H.1 and found to be leak-free.

(c) Monitoring: The equipment items listed in this section are subject to all the monitoring requirements listed in District Rule 331.F. The test methods in Rule 331.H shall be used, when applicable.

(d) Recordkeeping: All inspection and repair records shall be retained at the source for a minimum of five years. The equipment listed in this section is subject to all the recordkeeping requirements listed in District Rule 331.G. In addition, Greka shall:

1. *I I&M Log* - Record in a log the following:
   (a) A record of leaking components found (including name, location, type of component);
   (b) Date of leak detection;
   (c) The ppmv reading;
   (d) Date of repair attempt;
   (e) Method of detection;
   (f) Date of re-inspection;
   (g) The ppmv reading after leak is repaired;
   (h) A record of the total components inspected and the total number and percentage found leaking by component type;
   (i) A record of leaks from critical components;
   (j) A record of leaks from components that incur five repair actions within a continuous 12-month period;
   (k) A record of component repair actions including dates of component re-inspections.

(e) Reporting: The equipment listed in this section is subject to all the reporting requirements listed in District Rule 331.G. On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all data required by the *Semi-Annual Compliance Verification Reports* condition of this permit. *[Re: District Rules 331 and 1303, 40 CFR 70.6]*

C.2 **Wells and Well Cellars.** The following equipment are included in this emissions category:

Table C.2-1 Wells and Well Cellar Equipment List

District Device ID #	Name
2893	Oil & Gas Wells (11): Each with a well cellar with surface area of 36 ft^2

(a) Emission Limits: Mass emissions from the wells and well cellars listed in Table C.2-1 above shall not exceed the limits listed in Table 0-3 and Table 0-4. Compliance with this condition shall be based on the operational, monitoring, recordkeeping and reporting conditions in this permit.

(b) Operational Limits: All process operations including gas gathering from the equipment listed in Table C.2-1 shall meet the requirements of District Rule 325.E and Rule 344, Sections D and E. For the well cellars, Greka shall comply with the requirements of

Rule 344.D.3, at a minimum. Compliance with these limits shall be assessed through compliance with the monitoring, record keeping and reporting conditions in this permit.

(c) Monitoring: The equipment listed in this section shall is subject to all applicable monitoring requirements of District Rule 344.F. The test methods outlined in District Rule 344.I shall be used, when applicable.

1. For well cellars, Greka shall comply with the requirements of Rule 344.D, at a minimum. Also, Greka shall inspect the well cellars to ensure that the liquid depth and the oil/petroleum depth do not exceed the following:

(i) Liquid depth exceeding 50 percent of the depth of the well cellar;

(ii) Oil/petroleum depth exceeding 2 inches unless the owner/operator has discovered the condition and the cellar is pumped within 7 days of discovery (if the cellar is inaccessible due to muddy conditions, it shall be pumped as soon as it is accessible).

(d) Recordkeeping: The cellar units are subject to all applicable recordkeeping requirements listed in District Rule 344.G. Specifically, Greka shall record, for each detection, the following information relating to detection of conditions which require pumping of a well cellar pursuant to Rule 344.D.3.c:

1. The date of the detection;

2. The name of the person and company performing the test or inspection;

3. The date and time the well cellar is pumped.

(e) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report shall list all the data required by the Semi-Annual Monitoring /Compliance Verification Reports condition listed below. *[Ref: District Rules 344 and 1303, 40 CFR 70.6]*

C.3 **Recordkeeping.** All records and logs required by this permit and any applicable District, state or federal rule or regulation shall be maintained for a minimum of five calendar years from the date of information collection or log entry at the lease. These records or logs shall be readily accessible and be made available to District upon request. *[Re: District Rule 1303, 40 CFR 70.6]*

C.4 **Semi-Annual Monitoring/Compliance Verification Reports.** Twice a year, Greka shall submit a compliance verification report to the District. Each report shall document compliance with all permit, rule or other statutory requirements during the prior two calendar quarters. The first report shall cover calendar quarters 1 and 2 (January through June) and shall be submitted no later than September 1. The second report shall cover calendar quarters 3 and 4 (July through December) and shall be submitted no later than March 1. Each report shall contain information necessary to verify compliance with the emission limits and

other requirements of this permit (if applicable for that quarter). These reports shall be in a format approved by the District. Compliance with all limitations shall be documented in the submittals. All logs and other basic source data not included in the report shall be made available to the District upon request. The second report shall also include an annual report for the prior four quarters. Pursuant to Rule 212, a completed *District Annual Emissions Inventory* questionnaire. Greka may use the *Compliance Verification Report* in lieu of the *Emissions Inventory* questionnaire if the format of the CVR is acceptable to the District's Emissions Inventory Group and if Greka submits a statement signed by a responsible official stating that the information and calculations of emissions presented in the CVR are accurate and complete to best knowledge of the individual certifying the statement. The report shall include the following information:

(a) *Fugitive Hydrocarbons*. Rule 331 fugitive hydrocarbon I&M program data (quarterly data collected):

1. Inspection summary.

2. Record of leaking components.

3. Record of leaks from critical components.

4. Record of leaks from components that incur five repair actions within a continuous 12-month period.

5. Record of component repair actions including dates of component re-inspections.

6. An updated FHC I&M inventory due to change in component list or diagrams.

(b) *Cellars*.

1. The following information, for each detection of conditions which resulted in a pumping of any well cellar:

(i) The date of the detection;

(ii) The name of the person and company performing the test or inspection;

(iii) The date and time the well cellar was pumped.

(c) *General Reporting Requirements*.

1. A summary of each and every occurrence of non-compliance with the provisions of this permit, District rules, and any other applicable air quality requirement.

2. On an annual basis, the ROC and/or NO_x emissions from all permit exempt activities.

9.D District-Only Conditions

The following section lists permit conditions that are not federally enforceable (i.e., not enforceable by the USEPA or the public). However, these conditions are enforceable by the District and the State of California. These conditions have been determined as being necessary to ensure that operation of the facility complies with all applicable local and state air quality rules, regulations and laws. Failure to comply with any of these conditions shall be a violation of District Rule 206, this permit, as well as any applicable section of the California Health & Safety Code.

D.1 **Consistency with Analysis.** Operation under this permit shall be conducted consistent with all data, specifications, and assumptions included with the application and supplements thereof (as documented in the District's project file) and the District's analyses under which this permit is issued as documented in the Permit Analyses prepared for and issued with the permit.

D.2 **Equipment Maintenance.** All equipment permitted herein shall be properly maintained and kept in good working condition in accordance with the equipment manufacturer specifications at all times.

D.3 **Compliance.** Nothing contained within this permit shall be construed as allowing the violation of any local, state, or federal rules, regulations, air quality standards or increments.

D.4 **Severability.** In the event that any condition herein is determined to by invalid, all other conditions shall remain in force. *[Re: District Rules 103 and 1303.D.1]*

D.5 **Conflict Between Permits.** The requirements or limits that are more protective of air quality shall apply if any conflict arises between the requirements and limits of this permit and any other permitting actions associated with the equipment permitted herein.

D.6 **Access to Records and Facilities.** As to any condition that requires for its effective enforcement the inspection of records or facilities by the District or its agents, the permittee shall make such records available or provide access to such facilities upon notice from the District. Access shall mean access consistent with California Health and Safety Code Section 41510 and Clean Air Act Section 114A.

D.7 **Odorous Organic Sulfides (Rule 310).** The permittee shall not discharge into the atmosphere H_2S and organic sulfides that result in a ground level impact beyond the Greka property boundary in excess of either 0.06 ppmv averaged over 3 minutes and 0.03 ppmv averaged over one hour. *[Re: District Rule 310]*.

D.8 **Mass Emission Limitations**. Mass emissions for each equipment item associated with Palmer-Stendl Lease shall not exceed the values listed in Tables 5.2-3 and 5.2-4 of this permit. Emissions for the entire facility shall not exceed the emissions limits, as listed in Table 5.3-1.

D.9 **External Combustion Units - Permits Required.**

(a) An ATC/PTO permit shall be obtained prior to installation of any grouping of Rule 360 applicable boilers or hot water heaters whose combined system design heat input rating exceeds 2.000 MMBtu/hr.

(b) An ATC permit shall be obtained prior to installation, replacement, or modification of any existing Rule 361 applicable boiler or water heater rated over 2.000 MMBtu/hr.

(c) An ATC shall be obtained for any size boiler or water heater if the unit is not fired on natural gas or propane.

D.10 **Solvent Usage.** Use of solvents for wipe cleaning maintenance and laboratory use shall conform to the requirements of District Rules 202, 317, and 324. On an annual basis, Greka shall monitor the following for each solvent used:

(a) Emission Limits: Mass emissions from solvent usage shall not exceed the limits listed in Tables 5.2-3 and 5.2-4 of this permit. Compliance shall be based on the recordkeeping and reporting requirements of this permit. For short-term emissions, compliance shall be based on monthly averages.

(b) Operational Limits: Use of solvents for cleaning, degreasing, thinning and reducing shall conform to the requirements of District Rules 317 and 324. Compliance with these rules shall be assessed through compliance with the monitoring, recordkeeping and reporting conditions in this permit and facility inspections. In addition, Greka shall comply with the following:

1. *Containers.* Vessels or containers used for storing materials containing organic solvents shall be kept closed unless adding to or removing material from the vessel or container.

2. *Materials.* All materials that have been soaked with cleanup solvents shall be stored, when not in use, in closed containers that are equipped with tight seals.

3. *Solvent Leaks.* Solvent leaks shall be minimized to the maximum extent feasible or the solvent shall be removed to a sealed container and the equipment taken out of service until repaired. A solvent leak is defined as either the flow of three liquid drops per minute or a discernable continuous flow of solvent.

4. *Solvent Reclamation Plan.* Greka may submit a *Solvent Reclamation Plan* that describes the proper disposal of any reclaimed solvent. All solvent disposed of pursuant to the District approved Plan will not be assumed to have evaporated

as emissions into the air and, therefore, will not be counted as emissions from the source. The Plan shall detail all procedures used for collecting, storing and transporting the reclaimed solvent. Further, the ultimate fate of these reclaimed solvents must be stated in the Plan.

(c) Monitoring: The monitoring shall meet the requirements of Rule 202.U.3 and be adequate to demonstrate compliance with Rule 202.N threshold.

(d) Recordkeeping: All monitoring data shall be recorded in a log. Any product sheets (MSDS or equivalent) detailing the constituents of all solvents shall be maintained in a readily accessible location on the facility. Greka shall record the amount used in gallons per month, the percentage of ROC by weight (as applied), the solvent density, and whether the solvent is photochemically reactive. Greka shall also record the amount of surface coating used in gallons per month and the percentage of ROC by weight of the surface coating. Greka shall record in a log the amount of solvent reclaimed for District-approved disposal according to the District-approved *Solvent Reclamation Plan*.

(e) Reporting: On an annual basis, a report detailing the previous twelve month's activities shall be provided to the District. The report shall list all the data required by the Annual Compliance Report condition D.12.

D.11 **Permitted Equipment.** Only those equipment items listed in Attachment 10.5 are covered by the requirements of this permit and District Rule 201.E.2. *[Re: District Rule 201]*

D.12 **Annual Compliance Reporting.** In addition to its federally required semi-annual reporting, Greka shall also submit an annual report to the District, by March 1st of the following year containing the information listed below. These reports shall be in a format approved by the District. All logs and other basic source data not included in the report shall be available to the District upon request. Except where noted, the annual compliance report shall include monthly summaries of the following information:

(a) *Solvent Usage.*

1. The volume (in gallons) of each non-photochemically reactive solvent used each month;

2. The density of each such solvent and the percentage of ROC by weight in each solvent;

3. The total weight (in pounds) of all "photochemically reactive" (per District Rule 102.FF) solvents used each month, and the number of days each month these were used;

4. The volume (in gallons) of surface coating used each month;

5. The percentage of ROC by weight of the surface coating used.

(b) *Adhesives and Sealants.*

1. All records of adhesives and sealants used in the facility including their ROC content, unless all such adhesives or sealants were contained in containers less than 16 ounces in size or all such materials were exempt from Rule 353 requirements pursuant to Rule 353.B.1.

(c) *Mass Emissions.*

1. The annual emissions (TPY) from each permitted emissions unit for each criteria pollutant;

2. The annual emissions (TPY) from each exempt emissions unit for each criteria pollutant;

3. The annual emissions (TPY) totaled for each criteria pollutant.

(d) *General Reporting Requirements.*

1. A brief summary of breakdowns and variances reported/obtained per Regulation V along with the excess emissions that accompanied each occurrence.

2. A summary of each use of CARB Certified equipment used at the facility. List the type of equipment used, CARB Registration Number, first date of use and duration of use and an estimate of the emissions generated.

3. A copy of the Rule 202 De Minimis Log for the stationary source.

_____

AIR POLLUTION CONTROL OFFICER

_____

Date

NOTES:

(a) Permit Reevaluation due date: February 2015

(b) Part 70 Operating Permit Expiration Date: February 2015

(c) This permit supersedes all previously issued permits for this facility.

10.0 Attachments

10.1 Emission Calculation Documentation
10.2 Emission Calculation Spreadsheets
10.3 Fee Calculations
10.4 IDS Database Emission Tables
10.5 Equipment List
10.6 Well List
10.7 Greka Comments on Draft Permit / District Response

10.1 Emission Calculation Documentation

Palmer-Stendl Lease

This attachment contains all relevant emission calculation documentation used for the emission tables in Section 5. Refer to Section 4 for the general equations. The letters A-C refer to Table 5.2-1 and Table 5.2-2.

Reference A - Fugitive Components (*Valves, fittings etc., at the wellheads)*

- The maximum operating schedule is in units of hours.
- All safe to monitor components are credited an 80 percent control efficiency. Unsafe to monitor components (as defined in Rule 331) are considered uncontrolled.
- For existing onshore sources without a detailed component count inventory, the statistical models developed by the CARB/KVB were used. The CARB/KVB Method uses statistical models based on the facility's gas/oil ratio and the number of active wells to determine the emission factor (see Attachment 10.2).
- District Policy and Procedure 6100.060.1996 (*Calculation of Fugitive Hydrocarbon Emissions at Oil and Gas Facilities by the CARB/KVB Method,* July 1996) is used as the basis for implementing the CARB/KVB methodology (see Attachment 10.2).
- Emission factors from the CARB/KVB Method were also used determining fugitive emissions from wellheads casing (i.e., piping and equipment associated with the underground casing) and from pumps and compressors (see Attachment 10.2).

In order to determine the applicable fugitive hydrocarbon (FHC) emission factors for equipment in a facility, the following definitions are provided specific to this methodology:

1. Gas to Oil Ratio (GOR): The volume ratio of gas to liquid crude oil produced by the facility wells in units of standard cubic feet per day (scfd) of gas to barrel per day (bbl/day) of crude oil.
2. Wells Heads: Well piping and pumping equipment located above the underground oil and gas well casing.
3. Active Oil Wells: All oil and gas producing wells not abandoned (e.g. not plugged with concrete to block the well). Active oil wells do not include wastewater re-injection wells.

To calculate FHC emissions from an oil and gas facility, the CARB/KVB method requires the following data listed in Table 10.1-1. From this data, Facility Model Numbers can be determined from Table 10.1-2.

Table 10.1-1 Data Required

Parameter	Units
1. The total gas production from the facility	SCF/day
2. The total dry crude oil production and API gravity of the crude produced by the facility	bbl/day and ˚ API
3. The total gas production divided by the total dry oil produced. (Gas oil Ratio (GOR))	SCF/bbl
4. The number of active oil and gas production wells that are serviced by the facility. Do not count waste water re-injection, or abandoned (plugged) wells	Number of wells
5. The types, quantities and characteristics of the following equipment at the facility:	
5.1 Pumps (facility has them or not)	Yes/No
5.2 Compressors (facility has them or not)	Yes/No

Table 10.1-2 Facility Model Numbers

Model #1	Number of wells on the lease is less than 10 and the GOR is less than 500.
Model #2:	Number of wells on the lease is between 10 and 50 and the GOR is less than 500.
Model #3	Number of wells on the lease is greater than 50 and the GOR is less than 500.
Model #4:	Number of wells on the lease is less than 10 and the GOR is greater than or equal to 500.
Model #5:	Number of wells on the lease is between 10 and 50 and the GOR is greater than or equal to 500.
Model #6:	Number of wells on the lease is greater than 50 and the GOR is greater than or equal to 500.

Emission Factors: "Uncontrolled" ROC emission factors are provided in Table 10.1-3 and Table 10.1-4 for valves and fittings based on the lease model number. Table 10.1-5 provides emission factors for wellheads, pumps and compressors. All emission factors listed in Tables 10.1-3 through 10.1-5 are for ROC emission factors. The methane and ethane constituents have been removed. Control efficiencies are provided in Table 10.1-6.

Table 10.1-3 Valve Emission Factors

Lease Model	**ROC Emission Factor by Service Type** (Lb/day-well)*10^{-4}			
	Gas	**Liquid**	**Mixture**	**Condensate**
Model #1	14,171.70	0.982	748.355	0
Model #2	6,807.46	0.971	190.993	0
Model #3	62.177	0.260	154.327	0
Model #4	44,784.90	1.215	303.513	0
Model #5	8,293.50	0.509	334.359	0
Model #6	16,839.20	0.084	239.978	0

Table 10.1-4 Fitting Emission Factors

Lease Model	ROC Emission Factor by Service Type (lb/day-well)*10^{-4}			
	Gas	**Liquid**	**Mixture**	**Condensate**
Model #1	8,483.620	323.495	1,139.750	0.000
Model #2	5,788.960	0.000	302.830	0.000
Model #3	166.743	9.719	496.834	0.099
Model #4	20,399.100	0.001	920.142	0.000
Model #5	17,547.300	29.052	1,847.850	0.000
Model #6	24,890.200	0.000	115.139	0.243

Table 10.1-5 Emission Factors for Wellheads, Pumps, and Compressors

Active (Not abandoned) Oil Wells	0.0097 lb-ROC/well-day
If Facility Uses Pumps	0.0028 lb-ROC/well-day
If Facility Uses Compressors	0.0680 lb-ROC/well-day

Table 10.1-6 Standard Control Efficiency

Equipment Category	Type of Control	ROC Control Efficiency (% by wt.)
Fugitive components	Fugitive inspection and maintenance program implemented per Rule 331	80

Detailed emission calculations are shown in Attachment **Error! Reference source not found.**.

Reference B - Well Cellars

- Maximum operating schedule is in units of hours.
- Emission calculation methodology for sumps, and cellars based on the CARB/KVB report Emissions Characteristics of Crude Oil Production Operations in California (1/83).
- Calculations of cellars and sump emissions are based on surface area of emissions unit as supplied by the applicant.
- The cellars are assigned a control efficiency of 70%.
- Maximum surface area of each cellar does not exceed 36 sq. ft. (i.e., a square cellar not exceeding 6 ft. by 6 ft.).

Reference C - Solvents

- All solvents not used to thin surface coatings are included in this equipment category.
- Exempt solvent emissions (per Rule 202.U.3) are assumed to be based on 55 gallons of solvent use (maximum expected) at the facility with 6.6 lb. of ROC per gallon of solvent.
- Emissions from exempt solvent use, per Rule 202.N shall not exceed 10 tons per year.

10.2 Emission Calculation Spreadsheets

FUGITIVE HYDROCARBON CALCULATIONS - CARB/KVB METHOD

ADMINISTRATIVE INFORMATION			
Attachment:			
Company:	Greka Oil and Gas, Inc.	Version:	fhc-kvb5.xls
Facility:	Palmer Stendl Lease	Date:	24-Oct-00
Processed by:	JJM		
Date:	11/23/2009		
Path & File Name:			
\\sbcapcd.org\shares\Groups\ENGR\WP\Oil&Gas\Greka\SOUTH Cat Canyon - Pt70\Palmer Stendl\Pt70 Renew al-2009\[PalmerStendl FHC KVB Calcs.xls]FHC			

Reference: CARB speciation profiles #s 529, 530, 531, 532

Data	Value	Units
Number of Active Wells at Facility	11	wells
Facility Gas Production		scf/day
Facility Dry Oil Production		bbls/day
Facility Gas to Oil Ratio (if > 500 then default to 501)	501	scf/bbl
API Gravity	20	degrees API
Facility Model Number	5	dimensionless
No. of Steam Drive Wells with Control Vents	0	wells
No. of Steam Drive Wells with Uncontrol Vents	0	wells
No. of Cyclic Steam Drive Wells with Control Vents	0	wells
No. of Cyclic Steam Drive Wells with Uncontrol Vents	0	wells
Composite Valve and Fitting Emission Factor	2.8053	lb/day-well

Lease Model	Valve ROG Emission Factor Without Ethane	Fitting ROG Emission Factor Without Ethane	Composite ROG Emission Factor Without Ethane	
1	**1.4921**	**0.9947**	**2.4868**	lbs/day-well
2	**0.6999**	**0.6092**	**1.3091**	lbs/day-well
3	**0.0217**	**0.0673**	**0.0890**	lbs/day-well
4	**4.5090**	**2.1319**	**6.6409**	lbs/day-well
5	**0.8628**	**1.9424**	**2.8053**	lbs/day-well
6	**1.7079**	**2.5006**	**4.2085**	lbs/day-well

Model #1: Number of wells on lease is less than 10 and the GOR is less than 500.
Model #2: Number of wells on lease is between 10 and 50 and the GOR is less than 500.
Model #3: Number of wells on lease is greater than 50 and the GOR is less than 500.
Model #4: Number of wells on lease is less than 10 and the GOR is greater than 500.
Model #5: Number of wells on lease is between 10 and 50 and the GOR is greater than 500.
Model #6: Number of wells on lease is greater than 50 and the GOR is greater than 500.

ROC Emission Calculation Summary Results Table
Reactive Organic Compounds[(c)]

	lbs/hr	lbs/day	tons/year
Valves and Fittings[(a)]	0.26	6.17	1.13
Sumps, Wastewater Tanks and Well Cellars[(b)]	0.47	11.18	2.04
Oil/Water Separators [(b)]	0.00	0.00	0.00
Pumps/Compressors/Well Heads[(a)]	0.01	0.18	0.03
Enhanced Oil Recovery Fields	0.00	0.00	0.00
Total Facility FHC Emissions (ROC)	**0.73**	**17.53**	**3.20**

a: Emissions amount reflect an 80% reduction due to Rule 331 implementation.
b: Emissions reflect control efficiencies where applicable.
c: Due to rounding, the totals may not appear correct

Emission Calculation by Emission Unit

Pumps, Compressors, and Well Heads Uncontrolled Emission Calculations

Number of Wells	11	wells
Wellhead emissions	0.1067	ROC (lb/well-day)
FHC from Pumps	0.0429	ROC (lb/well-day)
FHC from Compressors	0.7469	ROC (lb/well-day)
Total:	0.8965	ROC (lb/well-day)

Sumps, Uncovered Wastewater Tanks, and Well Cellars

Efficiency Factor: (70% for well cellars, 0% for uncovered WW tanks, sumps and pits)

Unit Type/Emissions Factor

	Heavy Oil Service	Light Oil Service	
Primary	0.0941	0.138	(lb ROC/ft^2-day)
Secondary	0.0126	0.018	(lb ROC/ft^2-day)
Tertiary	0.0058	0.0087	(lb ROC/ft^2-day)

Surface Area and Type (emissions in lbs/day)

Description/Name	Number	Area (ft^2)	Primary	Secondary	Tertiary
Well Cellars[(a)]	11	396.00	11.18		
				0.00	
					0.00
(a) A 70% reduction is applied for implementation of Rule 344 (*Sumps, Pits, and Well Cellars*).			11.18	0.00	0.00

Covered Wastewater Tanks

Efficiency Factor: 85%

Surface Area and Type (emissions in lbs/day)

Description/Name	Number	Area (ft^2)	Primary	Secondary	Tertiary
			0.00		
				0.00	
					0.00
			0.00	0.00	0.00

Covered Wastewater Tanks Equipped with Vapor Recovery

Efficiency Factor: 95%

Surface Area and Type (emissions in lbs/day)

Description/Name	Number	Area (ft^2)	Primary	Secondary	Tertiary
			0.00		
				0.00	
					0.00
			0.00	0.00	0.00

Oil/Water Separators

Efficiency Factor: varies (85% for cover, 95% for VRS, 0% for open top)

Emissions Factor: 560 (lb ROC/MM Gal)

Type (emissions in lbs/day)

Description/Name	TP-MM Gal	Equipped with Cover	Equipped with VRS	Open Top	Total lb/day
		0.0			
			0.0		
				0.0	
		0.0	0.0	0.0	0.0

10.3 Fee Calculations

Permit fees for the Palmer-Stendl Lease are based on equipment rating, pursuant to District Rule 210.I.B.2 and Schedule A.

NOTE: All work performed with respect to implementing the requirements of the Part 70 Operating Permit program, including federal permit processing and federal permit compliance monitoring are assessed on a cost reimbursement basis pursuant to District Rule 210.I.C.

FEE STATEMENT

PT-70/Reeval No. 08075 - R8

FID: 03307 Palmer Stendl Lease / SSID: 02658

Santa Barbara County
Air Pollution Control District

Device Fee

Device No.	Device Name	Fee Schedule	Qty of Fee Units	Fee per Unit	Fee Units	Max or Min. Fee Apply?	Number of Same Devices	Pro Rate Factor	Device Fee	Penalty Fee?	Fee Credit	Total Fee per Device
002893	Oil and Gas Wellheads	A1.a	1.000	63.48	Per equipment	No	11	1.000	698.28	0.00	0.00	698.28
002892	Valves & Fittings	A1.a	1.000	63.48	Per equipment	No	1	1.000	63.48	0.00	0.00	63.48
	Device Fee Sub-Totals =								**$761.76**	**$0.00**	**$0.00**	
	Device Fee Total =											**$761.76**

Permit Fee

Fee Based on Devices **761.76**

Fee Statement Grand Total = $761

Notes:

(1) Fee Schedule Items are listed in District Rule 210, Fee Schedule "A".
(2) The term "Units" refers to the unit of measure defined in the Fee Schedule.

10.4 *IDS Database Emission Tables*

Table 0-1 Facility Permitted Potential to Emit (PPTE)

Facility	Units	NO_x	ROC	CO	SO_x	PM	PM_{10}
Palmer-Stendl	lbs/day	**0.00**	**17.53**	**0.00**	**0.00**	**0.00**	**0.00**
	TPY	**0.00**	**3.20**	**0.00**	**0.00**	**0.00**	**0.00**

Table 10.4-2. Greka South Cat Canyon Stationary Source PTE

Facility	FID	Units	NOx	ROC	CO	SOx	PM	PM10	GHG
Bell Lease	3211	lbs/day	20.94	246.74	33.95	71.65	1.57	1.57	31,870.80
		TPY	3.76	44.83	6.20	13.08	0.29	0.29	5,813.42
Blockman Lease	3306	lbs/day	0.00	43.44	0.00	0.00	0.00	0.00	0.00
		TPY	0.00	7.93	0.00	0.00	0.00	0.00	0.00
ICE Facility	3831	lbs/day	279.74	21.73	259.60	19.19	1.84	1.84	21,959.96
		TPY	50.68	3.37	42.74	3.47	1.34	1.34	3,984.86
Palmer Stendl Lease	3307	lbs/day	0.00	17.53	0.00	0.00	0.00	0.00	0.00
		TPY	0.00	3.20	0.00	0.00	0.00	0.00	0.00
TOTALS		lbs/day	300.68	329.44	293.55	90.84	3.41	3.41	53,830.76
		TPY	54.44	59.33	48.94	16.55	1.63	1.63	9,798.28

Table 0-3 Greka Cat Canyon Stationary Source Net Emission Increase Since 1990 (FNEI-90)

Facility	Permits	Units	NOx	ROC	CO	SOx	PM	PM10
Bell Lease	ATC 9146, 9412, 9387, 13204, 13264, 13547, 13661, 13769	lbs/hr	0.45	2.32	7.11	0.91	0.13	0.13
		lbs/day	10.72	37.63	170.44	21.80	3.09	3.09
		TPQ	0.49	1.74	8.19	1.00	0.14	0.14
		TPY	1.95	6.93	32.73	3.98	0.56	0.56
Blockman Lease	ATC 9964, 13690	lbs/hr	0.00	0.05	0.00	0.00	0.00	0.00
		lbs/day	0.00	1.05	0.00	0.00	0.00	0.00
		TPQ	0.00	0.05	0.00	0.00	0.00	0.00
		TPY	0.00	0.19	0.00	0.00	0.00	0.00
ICE Facility	ATC 9610, 9975, 10133, 10421	lbs/hr	0.00	0.00	0.00	0.00	0.00	0.00
		lbs/day	0.00	0.00	0.00	0.00	0.00	0.00
		TPQ	0.00	0.00	0.00	0.00	0.00	0.00
		TPY	0.00	0.00	0.00	0.00	0.00	0.00
Palmer Stendl	ATC 9665	lbs/hr	0.00	0.02	0.00	0.00	0.00	0.00
		lbs/day	0.00	0.48	0.00	0.00	0.00	0.00
		TPQ	0.00	0.03	0.00	0.00	0.00	0.00
		TPY	0.00	0.10	0.00	0.00	0.00	0.00
	Source NEI	lbs/hr	0.45	2.39	7.11	0.91	0.13	0.13
		lbs/day	10.72	39.16	170.44	21.80	3.09	3.09
		TPQ	0.49	1.82	8.19	1.00	0.14	0.14
		TPY	1.95	7.22	32.73	3.98	0.56	0.56

10.5 Equipment List

Tuesday, December 18, 2012
Santa Barbara County District – Equipment List

PT-70/Reeval 08075 R8 / FID: 03307 Palmer Stendl Lease / SSID: 02658

A PERMITTED EQUIPMENT

1 O&G Wells, Cellars and Unassociated Valves & Flanges

1.1 Oil and Gas Wellheads

Device ID #	**002893**	***Device Name***	**Oil and Gas Wellheads**
Rated Heat Input		*Physical Size*	11.00 Total Wells
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

1.2 Well Cellars - All

Device ID #	**002894**	***Device Name***	**Well Cellars - All**
Rated Heat Input		*Physical Size*	396.00 Square Feet Cellar Area
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Eleven (11) wells have well cellars each with a surface area of 36 square feet.		

1.3 Valves & Fittings

Device ID #	**002892**	***Device Name***	**Valves & Fittings**
Rated Heat Input		*Physical Size*	11.00 Active Wells
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

B EXEMPT EQUIPMENT

1 Wipe Cleaning and Laboratory Solvent Use

Device ID #	**100394**	***Device Name***	**Wipe Cleaning and Laboratory Solvent Use**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:*	
Location Note			
Device Description	Permit-exempt under Rule 202 Sections N and U.3.		

10.6 Well List

Attachment 10.6. Permitted Wells.

Operator Name	Field Name	Lease	Well#	API	Well Stat	Pool	WellType	PWT Stat	S	T	R	BM	Area	Area Name	NEI
Greka Oil & Gas, Inc.	Cat Canyon	Palmer Stendel	B-1	08301617	Idle	00	OG	Idle	26	9N	33W	SB	21	West Area	No
Greka Oil & Gas, Inc.	Cat Canyon	Palmer Stendel	B-2	08301618	Active	00	OG	Active	26	9N	33W	SB	21	West Area	No
Greka Oil & Gas, Inc.	Cat Canyon	Palmer Stendel	8	08301624	Idle	00	OG	Idle	26	9N	33W	SB	21	West Area	No
Greka Oil & Gas, Inc.	Cat Canyon	Palmer Stendel	11	08301625	Idle	00	OG	Idle	26	9N	33W	SB	21	West Area	No
Greka Oil & Gas, Inc.	Cat Canyon	Palmer Stendel	12	08301626	Active	00	OG	Active	26	9N	33W	SB	21	West Area	No
Greka Oil & Gas, Inc.	Cat Canyon	Palmer Stendel	14	08301627	Idle	00	OG	Idle	26	9N	33W	SB	21	West Area	No
Greka Oil & Gas, Inc.	Cat Canyon	Palmer Stendel	5	08301699	Idle	05	OG	Idle	26	9N	33W	SB	21	West Area	No
Greka Oil & Gas, Inc.	Cat Canyon	Palmer Stendel	16	08320698	Idle	00	OG	Idle	26	9N	33W	SB	21	West Area	No
Greka Oil & Gas, Inc.	Cat Canyon	Palmer Stendel	13	08320738	Idle	00	OG	Idle	26	9N	33W	SB	21	West Area	No
Greka Oil & Gas, Inc.	Cat Canyon	Palmer Stendel	12H	08322239	Active	00	OG	Active	26	9N	33W	SB	21	West Area	No
Greka Oil & Gas, Inc.	Cat Canyon	Palmer-Stendel	410H	08322270	Active	00	OG	Active	26	9N	33W	SB	21	West Area	Yes

1. This table represents the number of active and idle oil and gas wells at this facility as reported by the DOGGR.
2. Section (S), Township (T) and Range, (R) is a surveyed rectangular land grid system that covers most of the United States. A township is the measure of units north or south of a baseline, the horizontal line where the survey began. A Range is the measure of units east or west of a meridian, the vertical line where the survey began. Each Township/Range is thirty-six square miles, measuring 6 miles by 6 miles, and contains 36 one-mile square sections. In California, there are three base and meridians, Humboldt, Mount Diablo, and San Bernardino.